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RESEARCH REPORT

Exclusionary public interfaces in the City of Tshwane: two urban case studies

Bianca Ernst

Supervisor: Dr Nico Botes

Department of Architecture
Faculty of Engineering, the Built Environment and Information Technology
University of Pretoria
South Africa

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DECLARATION OF ORIGINALITY

I declare that the mini-dissertation, *Exclusionary public interfaces in the City of Tshwane: the comparison of two urban case studies*, which has been submitted in fulfilment of part of the requirements for the module of DIT 801, at the University of Pretoria, is my own work and has not previously been submitted by me for any degree at the University of Pretoria or any other tertiary institution.

I declare that I obtained the applicable research ethics approval in order to conduct the research that has been described in this dissertation.

I declare that I have observed the ethical standards required in terms of the University of Pretoria's ethic code for researchers and have followed the policy guidelines for responsible research.

Signature: ……  ……

Date: ……28 June 2024……

Abstract

Urban public spaces forfeit their democratic potential when they are riddled with exclusionary spatial measures and devices. These instances are physical interventions that prohibit particular individuals from benefitting from urban public space at an equitable level with all other people. A concentration of exclusionary spatial measures and devices exist in the interfaces between private and public urban developments in the City of Tshwane. Their implementation lies at the hand of landowners and hostile, negligent, or short-sighted design. This paper documents such instances in Robert Sobukwe Street, Sunnyside, and at the Ditsong National Museum of Cultural History, Pretoria CBD, investigates their influence on pedestrian urban users, and urges for legislation to delegate a dual governance over urban public interfaces.

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1. Introduction

1.1. Background

Decades after the legal abolition of racially segregated space in South Africa, the City of Tshwane maintains a divided urban reality. Integration efforts are counterworked by smaller scale interventions that effectuate large scale shifts in the city's publicness. Urban public space in the City of Tshwane is rapidly deteriorating, to a point where it is almost entirely limited to the streets and a handful of gated parks. Such reduction in urban public space is often at the hands of the wealthy, and to the gain of only a few. It contradicts the equitable and universal benefits attainable from urban living, by robbing particular individuals from exercising their right to the city (Harvey 2003) on an equitable level.

> *Good urban spaces of a public nature are those created to provide opportunities for citizens to affirm their shared rights to the city (Safer Spaces 2024; Harvey 2003) in a democratic manner (Makakavhule & Landman 2020). 'Exclusionary spatial measures and devices in urban public space' refers to material entities in urban public space that prohibit individuals or groups from actively participating in the city's benefits with dignity and on a level equitable with that of others. Such instances act in opposition to universal design (South Africa 2016) and could lead to social alienation. Apart from non-action, such measures and devices result from intentional to unintentional actions, hostile and negligent design (Rosenberger 2019), short-sighted design and design that does not acknowledge particular groups (South Africa 2016). Processes toward exclusion impair spatial democracy, while products towards exclusion impair democratic space (Makakavhule & Landman 2020). Both go against the fundamentals of publicness as they are not for everyone, nor are they transparent in their motive or existence (Botes, Ernst, & Wolmarans 2024).*

The ambiguity that exists in the thresholds between public and private is a considerable role-player in the imposition of exclusionary spatial measures and devices into urban public space. This uncertainty taints the keenness with which different parties partake in the responsibility for the publicness of certain urban spaces. This paper focuses on the impact of, and responsibility for, the public interfaces of urban architecture on the publicness of urban spaces in their proximity. The 'public interface' of any architecture, or place, is the spatial volume created between a more private (often interior) space and the street (**figure 1**). In private buildings this definition refers to the façade and envelope, the unbuilt area of the site adjacent to the built structure, the sidewalks adjacent to the site, and all visual connections to these. In public buildings this definition enters the interior at degrees proportionate to the degree of publicness of each interior space. A building's public interface is therefore the amalgamation of contact points that the building allows between private and public users.

Figure 1: The façade as a surface (left) vs. the public interface as an experiential volume (right)

1.2. Research aim, research problem, and research questions

Principally, the paper aims to define the public interface as the nucleus of democratic interactions, and therefore the domain where social exclusion is the most impactful. The problem of spatial accountability within the grey area between public and private ownership is identified and addressed. A theoretical framework is used to allocate a range of responsibilities to different aspects of the public interface of urban architecture, in order to pursue the following set of research questions. How can exclusionary spatial measures and devices in the public interfaces of urban architecture in the City of Tshwane be understood? This main question occasions a set of sub-questions. How can exclusionary spatial measures and devices in urban public space in the City of Tshwane be defined? How can the interaction between exclusionary urban public interfaces in the City of Tshwane and the pedestrian be determined and assessed? How can exclusionary spatial measures and devices in the public interfaces of urban architecture in the City of Tshwane be assessed on different scales of interpretation? How can the social groups affected by exclusionary spatial measures and devices in the public interfaces of urban architecture in the City of Tshwane be identified and such impacts be assessed?

1.3. Literary context and research design

Existing literature provides considerations in the discovery of new exclusionary spatial measures and devices, as well as suggestions on how a diverse public might perceive such instances. More academic work outlines the deep context of the City of Tshwane and its history in spatial segregation. Seminal authors write about modern-day spatial segregation in the City of Tshwane, but no literature seems to relay a matrix of exclusionary spatial measures and devices in urban public space in the City of Tshwane. Similarly, existing literature philosophises on different parts of what this paper refers to as the public interface. Some describe the interrelation between the physicality of the envelope and political agency, and other the role of the façade through an array of perspectives. None, however, seem to attribute to the public interface the role of serving the public as acutely as this study aims to do.

The discussion is led by two firsthand case studies that relay the effects of exclusionary spatial measures and devices in Sunnyside and Pretoria CBD respectively. Robert Sobukwe Street in Sunnyside is chosen for its rich history in integration efforts, its character as a transient space, and its urban architecture involving individual interfaces woven together into a streetscape language. The Ditsong National Museum of Cultural History in the south of Pretoria CBD is chosen for its history in the city's layout, it's character as pseudo-public space, and the stark public interface of the massive museum building. Two areas in moderate approximation are chosen to observe how pedestrian movement disperses between them, and how exclusionary spatial measures and devices influence this behaviour. The study is limited to daytime site visits, and the data is limited to instances that are of a physical, consistent, and observable nature. The case studies produce critical data that quantifies and describes exclusionary spatial measures and devices found in the two areas. Subsequently, this paper discusses interaction between these discovered exclusionary spatial measures and devices and the public interfaces of urban architecture.

It is critical to acknowledge the relationship between exclusionary spatial measures and devices that counterwork integration strategies, and the ownership rights and responsibilities of those who have the power and financial capacity to implement or reverse them. A concerning quantity of correlations arise between the system of Apartheid and the exclusionary tendencies that are witnessed today (Landman 2004:11). People who are empowered by an exclusionary system remove themselves ever further from those who

remain the victims of thereof. As an endeavour to reclaim urban public space and to increase its publicness to a maximum for a universal user, this study urges public governance to abolish exclusionary spatial measures entirely, while legislating a standard of rigorous considerations for inclusion in the public interface of both private and public urban development. Designing for healthy public interfaces is a small step that acts as a catalyst for the revival and redesign of truly democratic urban public space.

This study defines exclusionary spatial measures and devices in urban public space, as cited above, and understands these measures through the lens of ownership of the interfaces in which they exist. Their impact on pedestrian behaviour is determined and assessed in the two case studies, as a response to the literature review.

2. Literature Review

2.1. Spatial democracy and inequality

Although land-use segregation and private space have not always been part of human settlement patterns, they have been part of South Africa's history since the country's colonisation in 1652. Strauss (2019:137) attributes the roots of our spatially segregated past to British colonists enforcing their land-use management schemes in a new context; one where land-use and landownership were in direct response to race (**figure 2**). Through key theories such as "sanitation syndrome", "moral panic and racial hysteria" (Strauss 2019:141), the author discusses the history of spatial segregation in South Africa and the legislation that occasioned each step. "[C]onfining black residents to separate settlements enabled local authorities to administer pass laws and influx control policies, while enhancing their political and socio-economic exclusion" (Strauss 2019:151). A study of the history of segregation in South Africa makes evident the institutionalised control of land-use as the backbone of inequality in this country: "no other capitalist state… structured income inequalities as methodically and severely as South Africa during Apartheid" (Seekings & Nattrass 2005 via Strauss 2019:155).

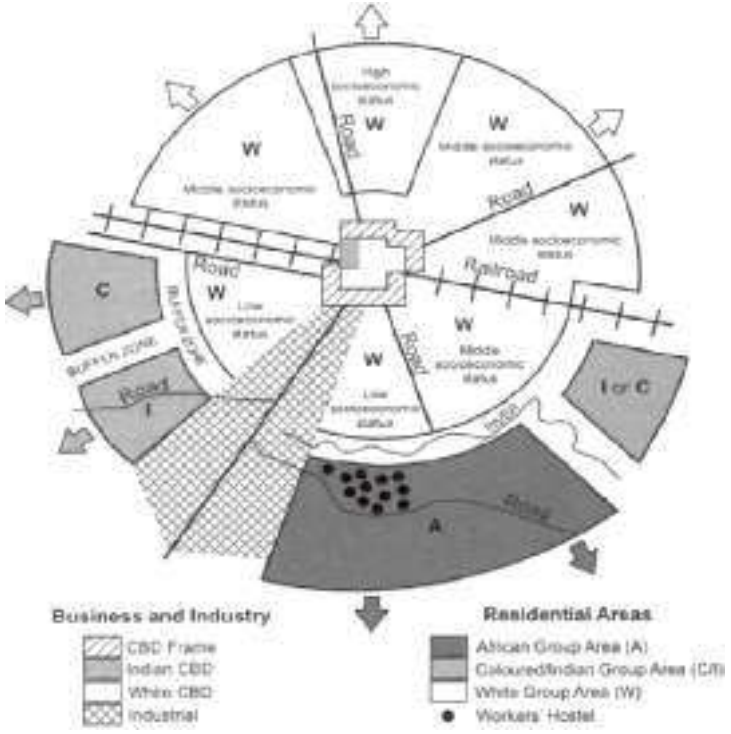


Figure 2: Apartheid city model (Davies 1981:61)

Such inequalities experienced in public spaces tie into the larger history of public and private space; the creation of public space implies the prior existence of private space and the implications of the state (de Magalhães 2010:562). The relationship between the two realms is discussed in depth in the writings of de Magalhães, where important questions are raised with regards to the preservation, governance, and security of public spaces. Perpetuated by managerial remnants from the days of colonisation, landownership remains the dictator of activity, and activity remains the defining factor of urban public space. The author references the concept of "club-goods" (2010:568) as an explanation of what the consequences of gated communities and "contracted-out" (2010:561) public spaces are. He concludes that the transfer of responsibilities surrounding the governance of public space will "lead to a redefinition of the very notion of such public space", which will impose on the indulging of users into the main attractions of urban publicness; inevitably stepping "away from an assumed universal entitlement" (de Magalhães 2010:572). Ultimately, the article urges designers to be conscientious of the effect on publicness that their decisions have.

The issue of ownership and urban spatial entitlement is worsened in South African cities by the recent spike in gated communities – a term used by Professor Landman (2004:5) as an umbrella term for "security villages" (private properties segregated from 'the outside') and "enclosed neighbourhoods" (urban public space segregated for 'security' purposes, as seen in **figure 3**). Landman raises issues regarding meanings embodied by the built environment, how these meanings are influenced by context, and how both are influenced by time. The study is a solid empirical study on the rate of increase in gated communities in South Africa, and the interpretation of attitudes toward these. Meanings of the hostility observed in gated communities are classified into physical meaning ("integration and accessibility, equity, and efficiency"), and symbolic meaning ("seclusion, exclusion, and conflict") (2004:6-11), to provide useful considerations in the analysis of the publicness of urban spaces. The paper connects the post-apartheid city and its future in gated communities to the pre-1994 reality in three ways, being: "the use of fear, inside-outsider exclusion, and spatial resettlement" (Landman 2004:12).

Figure 3: Access-controlled gated community in Lynnwood, City of Tshwane

Figure 4: Fear-led design interventions - multi-fencing in Pretoria CBD

All three of the above-mentioned commonalities between pre- and post-1994 urban South Africa manifest themselves in the fear-led design of urban public space (**figure 4**). Professor Landman (2017:11) affirms in further literature that the fear of crime has been much more far-reaching than the crime itself. She uses multiple case studies from the City of Tshwane to research the attitudes of the users of urban public space towards crime in the area and compares these attitudes to reality. The results of the study outline an array of exclusionary

spatial measures and devices evident as a result of "neglect, revitalisation, and privatisation" (Landman 2017:1). The analysis also points out several ironies in the perception of democracy, and in the classification of potentially dangerous individuals. For instance, there is a universal fear of the homeless and disgust with their hygienic compromise, with no regard for the lack of alternatives that these people are offered (2017:11). Higher economic classes reinforce the perceived connotation between consumerism and 'safety' (2017:5) when their homes are in enclosed neighbourhoods and their retail centres are in malls. This phenomenon is the key contributor to 'quasi-public'[1] space (Landman 2016: s.p.), the existence of which deteriorates the democratic value of true public space.

The interlinkage between consumerism and capitalism is well-known, and author Robert Rosenberger (2019) further theorises on its interrelation with the homelessness agenda often found in cities. Capitalism's favouring of private property perpetuates the hostile design that Rosenberger writes about, putting unhoused people in "a double bind" (Rosenberger 2019:888):

> *For them, socially legitimated private space does not exist, and so they are denied access to public space and public activity by the laws of a capitalist society that is anchored in private property and privacy.*

Rosenberger (2019) discusses hostility as a method to push certain groups out of urban public space and concludes this argument with concerns for that group's visibility. He urges further empirical data collection in the realm of hostile and otherwise exclusionary spatial measures in urban public space.

Where Rosenberger (2019) describes the unhoused as a generally excluded social group, Mark Priestly (2006) writes on the systematic invisibility, and recent efforts towards acknowledgement, of disabled persons. Both are examples of social groups that have been the victims of exclusionary spatial measures and devices in urban public spaces. Priestly references South Africa's history of racial segregation to point out the blatant need for a paradigmatic shift from the individual model in disability studies to the *social model*, which ascribes to society the responsibility to reverse the inaccessibility that people with impairments experience in urban environments. Urging disability studies to remain contextual, the author writes that "it would be inappropriate to pry into the lives of historically disadvantaged communities without also examining the structures of power and privilege that create that disadvantage" (Priestly 2006:26).

Such paradigmatic shift in focus from the systemic product to the causal processes is epitomised in Makakavhule and Landman's (2020) writings on deliberative democracy. The paper discusses democracy in urban public space in the City of Tshwane as both a process of governance – "spatial democracy" – and a product of design – "democratic space" (Makakavhule & Landman 2020:281). Through references to Marx's theories on 'alienation' and Foucault's writings on behavioural changes in public spaces (Foucault 1997), physical space becomes a necessary condition for procedural community participation in democracy. The problems of alienation, representation, homogenisation and resistance could be addressed through focus on recognition, voice, diversity and dialogue (Makakavhule & Landman 2020:290); therefore through active participation in decision-making. Urban design as a product faces problems of disconnection, differentiation, exclusion, and confrontation that could be overcome through focus on connectivity, equality, mix, and expression. Ultimately, "deliberation [should be] continuous and never fixed in time" (2020:291).

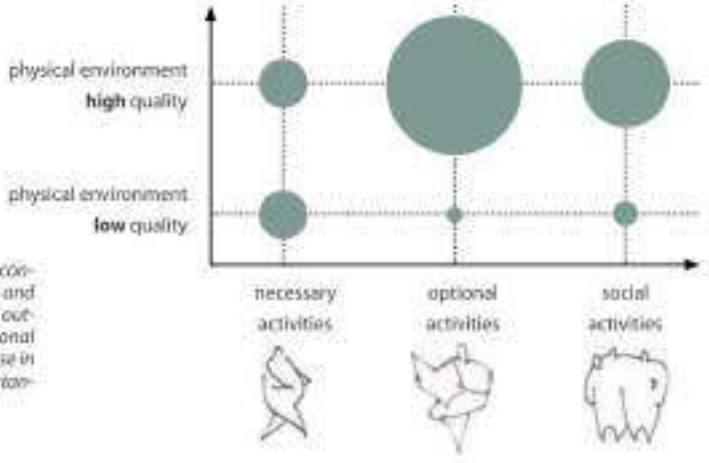
[1] Spaces with a public programme, but private ownership.

2.2. Aspects of urban public space

Of course, architecture can merely provide the spaces that facilitate such continuous deliberation. To ensure the "freedom" that Makakavhule and Landman (2020:280) use in their definition of urban public spaces, author Michael Bond reminds that "successful design is …about making people feel they have some control over their environment" (Bond 2017: s.p.). Where Makakavhule and Landman (2020) emphasise open accessibility and spaces of free assembly, Bond (2017) focuses on the ease of navigation through urban spaces that fosters in users both a sense of control of their movement and a sense of belonging in the space. He assigns to urban layouts the necessity to be easy to navigate, and urges building façades to be intriguing and complex, to negotiate with a fast-paced and generally uninterested pedestrian. *Hidden ways that Architecture Affects how you Feel* (Bond 2017) is a highly accessible paper that emphasises the responsibility that (urban) architects have to curate spaces to everyone's physical and emotional benefit.

Urban public spaces have this blatant accountability towards publicness, but seminal author Roger Trancik (1986) relays an entire category of spaces that are not quite public, and not quite private, that should also fall under designers' responsibility to be made universally accommodating. Spaces that fall under this definition are coined "lost spaces" (Trancik 1986: s.p.) and include unactivated urban public spaces, underutilised urban public spaces, unwelcoming pedestrian environments and unused infrastructure. Trancik writes extensively on integrated design strategies that revolve around five primary principles: linking sequential movement, lateral enclosure and edge continuity, integrated bridging, axis and perspective, and indoor-outdoor fusion (1986:220-225). These strategies act as a direct attempt to understand the human scale and social behavioural patterns that need to be integrated into the currently shallow dimension at which urban design takes place.

Jan Gehl, in his book titled *Life Between Buildings: Using Public Space* (2001), provides a framework for implementing these strategies through an in-depth analysis of human behaviour in outdoor urban public spaces, and a discussion on how these behaviours can be influenced by urban architecture (**figure 5**). He discusses difficult questions regarding (amongst other) the necessity to integrate people and the defining of public areas, and provides details of physical measures and devices in cities that occasion or oppose these tactics. These include dimensions of human observatory intrigue[2], angles of view, sensory bubbles, and observations at different moving speeds (Gehl, 2001).



Graphic representation of the connection between outdoor quality and outdoor activities. An increase in outdoor quality gives a boost to optional activities in particular. The increase in activity level then invites a substantial increase in social activities.

Figure 5: The relationship between spatial quality and activities (Gehl 2010:21)

[2] Distances at which humans feel a sense of connection to activities in their urban surroundings.

The sequel to this book, titled *Cities for People*, is built on the same principles, adopting a human-centred approach to the analysis of urban design. “It was taken for granted that cities are built for people”, critiques Gehl (2010:X) after 50 years of experience in urban design. The human dimensions have been neglected in favour of vehicles, yet such neglect never seems to stunt any growth. The city is explored as shaping people and being shaped by people, and attempts toward betterment are discussed expansively. An integral connection is highlighted between people, as the greatest attraction of the city, and the spaces that accommodate those people. Important human scales are depicted, as well as crucial observation distances and the sensory connotations paired with them (Gehl 2010).

Amongst the multitude of literature discussing the interchanges between the city and its pedestrian users, authors Kesici and Erkan (2023) investigate the effect of the façade on pedestrian behaviour. The paper analyses the topic through the comparison of two case studies, with the focus on façade features, the pedestrian’s experience, and their consequent interaction with the façade. The façade is conceptualised as an edge, which helps the pedestrian “define the third dimension of urban space” (2023:69), assisting with the ease of navigation that Bond (2017) theorises about. Keisici and Erkan reference Jan Gehl’s (2010:18) classifications of public behaviours: “necessary activities, optional activities, and social activities” (**figure 5**). Gehl is further quoted in the study of the active and passive relationship between the façade at ground floor and the pedestrian. Fundamentally, *The Effect of Public Façade Characteristics on Changing Pedestrian Behaviours* comes in direct conversation with the literature by Nasar (1994), “which examined what façade features evoke in human perception” (Keisici & Erkan 2023:74). The text does, however, not arrive at any measurable conclusion, which is likely due to controversies in monitoring strangers in masses.

The public’s response to urban public space can nevertheless be measured through intensive research and response to existing literature, which is what Mrugala and Hyun (2017) have achieved on the subject of the building envelope and its opportunities towards public participation. Envelope design at large is under the direct influence of rapid industrialisation, responding to trends merely concerning construction and environmental sustainability, with no regard for community sustainability. “The Postmodern city is characteristic for its generic representations, disconnected places, and less individuality and distinctiveness of building envelopes that focus merely on form and representation instead of connecting places” (Mrugala & Hyun 2017:3). ‘Sustainable communities’ encompass walkability and social interaction, and the paper prompts the introduction of well-designed façades into the requirements of such communities (**figure 6**).

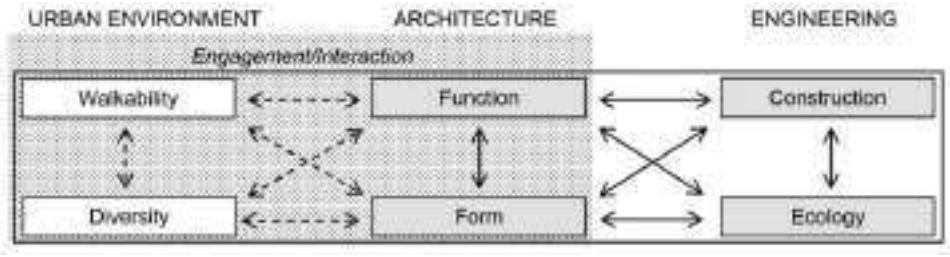


Figure 6: “Typical aspects of the building envelope (grey box) and proposed aspects (white box) connect architecture… with the urban environment”. (Mrugala & Hyun 2017:2)

Following the evolution of urban public space – from city blocks as an array of independent objects to the city as a compilation of transit spaces – the article highlights the development of the building envelope. The move from the Modern Movement façade as a product of the

interior, to the introduction of the curtain wall in the early 20th century remains a utilitarian solution that largely influences the form and representation of the building. Regarding the walkability of a city, the author references Michael Southworth's six performance dimensions: "connectivity, linkage, fine grained, varied land use pattern, safety, path quality, and path context" (Southworth 2005 via Mrugala & Hyun 2017:4). Of these, the last-mentioned is described as inherently subjective, but with some definable characteristics, like "coherence of built form, street design, visual interest of the built environment, transparency, spatial definition, landscape, and the overall explore-ability" (2017:4). Formalistically, building envelopes are classified into four categories (**figure 7**) as defined by Zaera-Polo, being: flat-horizontal, spherical/compact, flat-vertical, and vertical; each typology charged with its own political and emotional connotations (Zaera-Polo 2008:205).

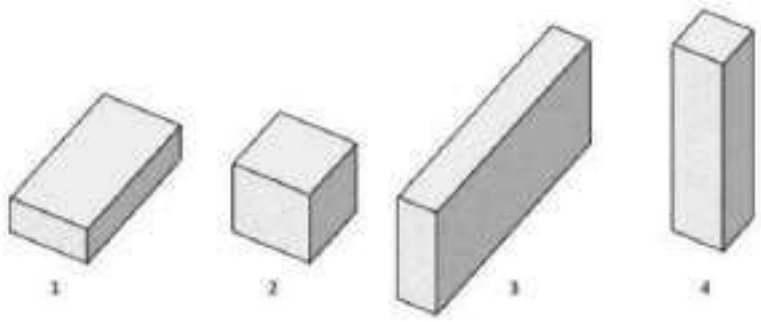


Figure 7: Four envelope forms visualised by Mrugala & Hyun (2017:4), from the literature of Zaera-Polo (2008:205): 1. Flat-horizontal, 2. spherical/compact, 3. flat-vertical, 4. vertical.

2.3. Politics in the public interface

Of course, the public interface of an architectural artefact is simultaneously the entire envelope, the surface of each façade[3], and the place resulting between private and public. In conjunction with the portrayal of the four envelope forms discussed above, author Alejandro Zaera-Polo (2008) unpacks the historic and current state of the political abilities and responsibilities of architecture. The building envelope is studied as the facilitator of political agency, as it acts as the link between the political and the material world. The envelope as a whole carries a multitude of responsibilities ranging from practical (climatic) to spatial (inside vs. outside) and from environmental (natural vs. manmade) to political (public vs private ownership), while the façade becomes a "representational device" (Zaera-Polo 2008:195). Representation in the façade is subject to theories of 'facialisation', while the envelope as a whole becomes a question of technology and the perpetuity or abolition of traditional architectural elements. Crucial relationships exist between the physical manifestation and political implications, like those between the building footprint shape and consequent surface area for public-private interaction (**figure 8**); between permeability and fluidity, and the interactions between public and private; between façade ratios and the environment's "degree of artificiality" (2008:197); between the natural and artificial elements and energy efficiency; and finally, between ambiguity in appearance and re-use opportunities.

> *Like a radiator adopting an intricate form to increase the surface of heat exchange with the air, a more intricate building footprint increases the vertical contact surface between private and public (Zarea-Polo 2008:197).*

[3] "any face of a building given special architectural treatment" (Miriam-Webster), sometimes used interchangeably with 'elevation'.

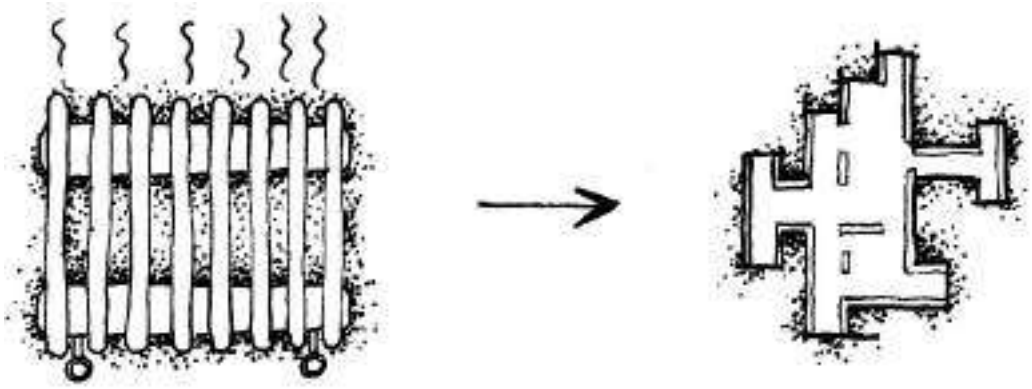


Figure 8: A more intricate building footprint allows for an increase in contact points between private and public in the building's envelope (visualised from Zaera-polo 2008:197)

All these examples "give architecture political agency" through considerations for "difference and repetition, consistency and variation, flexibility, transparency, permeability, local and global, and the definition of the ground" (Zaera-Polo 2008:197). Together with this, the envelope has the increasingly complex responsibility to accommodate diversifying users while negotiating an intensifying climate. The paper proposes that, in order to achieve appropriate political agency, architecture should aim not towards revolution but towards explicitation, which will "imply more complex political directionalities" (2008:204). Ultimately, the text outlines how architecture can be reinstated as a primary vessel of democratic and political activity. To quantify this, correlation is drawn between the number of interactions in and through the building envelope, and the number of possibilities in its contribution to future political events the architecture allows. Through the analogy of the envelope as a skin, it is scrutinised for its ability to deliberately maintain or avoid equilibrium in the interior.

The active relationships between the physical aspects of the urban envelope and the implied politics of the spaces it creates are further explored by authors like Asgarzadeh and co-authors who quantify the oppressiveness of the public interfaces of street-facing buildings (Asgarzadeh et al. 2012). Aspects that are confirmed to contribute to the experience in a streetscape include (amongst other) the width and height of the lateral enclosures, the presence of trees and the degree to which such trees soften the façade, and the intensity of visual clutter, especially such cluttering of urban media. The political outcome of these spatial realities is measured in its degree of oppression.

Visual experience, both explicit and implicit, contributes enormously to the experiential dimension of urban public space, and remains the primary topic of debate for literature on urban aesthetics. However, as with all categories of aesthetics, visual aesthetics in an urban setting is extremely difficult to define and research. Florio and co-authors (2023) attempt to study the impact of visual clutter on pedestrian comfort through sub-questions on the applicability of computer vision. The study concludes that a multitude of hard, sharp edges with high-contrasting colours and textures are what contribute most impactfully to visual clutter, but does not conclude on what such visual clutter might mean to a pedestrian user.

2.4. Two sites for investigation in the City of Tshwane

With both the streetscape as a whole and the envelopes of individual buildings charged with political capacity, it becomes clear where the opportunities for the creation of good urban public space lie in the South African context. The spatial segregation evident in our cities condemns the majority of public space to the streets, and gated communities bar the street from its adjacent architecture. Wallendorf (2014) explores this concern in her dissertation, focusing on Robert Sobukwe Street, Sunnyside, Tshwane. The study investigates the

concepts of navigation, programme, and thresholds to explore the façades along the street, and their potential towards interior-exterior social integration (Wallendorf, 2014). A brief contextual study shows the street as a transient space for pedestrians and a formal and informal retail node for the food and fashion industries. It also reveals a deficiency in open public spaces.

A map of Sunnyside shows this lack of open public space in Sunnyside and the other areas surrounding the CBD, with Jubilee Square as the only intact park. *The Bulletin of the International Planning History Society*, (van Ward 1993) relays the racial segregation of these areas. The whole of Pretoria CBD, including Sunnyside, was classified as a 'whites-only' zone, as non-white people were limited to the occupation of Marabastad, Banthule, and Lady Selbourne. Later, Atteridgeville, Soulsbourne and Mamelodi were added to the list of marginalised living areas for non-white people, but the rehabilitation of Sunnyside and Pretoria CBD as a whole was delayed until after the official end of Apartheid. Seventeen years after the end of apartheid, the 2011 census shows that Sunnyside maintains an 88% black population from a diverse array of cultural backgrounds.

Together with this rich cultural historical development, Sunnyside and its neighbouring environments boasts with an abundant selection of heritage artefacts in the built environment. *Plekke en Geboue van Pretoria* (le Roux & Botes 1993) is a source that lists and describes local heritage artefacts in the City of Tshwane, attributing significant value to (amongst many others) the National Museum of Cultural History – which used to be the old Mint building, The Pretoria City Hall, the Fire Station, The National Museum of Natural History, Burgerspark, Eaton Hall, Visagie Court, Sunnyside Galleries, Berrals building, and a variety of church buildings; only to name a few that fall within a small city axis stretching from Sunnyside to the southern edge of Pretoria central. Further heritage significance is outlined in the *Plan* (Government Gazette, 1968), showcasing the original building plans for the first Volkskas Building on Esselen Street, Sunnyside (now Robert Sobukwe Street).

The extensive heritage present in Sunnyside and the larger axis outlined above provokes great concerns for rich inner-city development. Authors Hanekom, Nadel and Stoltz (2012) convey the direct proportionality between a city's heritage quality and opportunities for inner-city development. In their chapter on Pretoria, the authors describe the post-apartheid inner city as changing, diverse and pluralised. The boulevard-like streets are enveloped by iconic architecture from the past that has been adapted for the actuality of the present (Hanekom et al. 2012).

Such adaptations are obvious in spaces of commerce along Robert Sobukwe Street, where formal and informal spaces are representative of the socio-economic development of the area. Students at the University of Pretoria Department of Architecture that participated at Honours level in the *Human Agency Studio*[4] of 2023 studied the socio-economic sphere of Robert Sobukwe Street in the food and fashion realms. The study places instances of practices in both sectors onto a biaxial scale defining formality, where 'informal' trading tends to be flexible in space and time, and 'formal' trading occurs in fixed space and time. A rigorous mapping of the street shows a few relatable conclusions; one being that the informal trading sector, reliant on public infrastructure, is underfunded and lacks public services, and another being that a symbiotic socio-economic relationship exists between formal and informal trading sectors. Such relationships are, however, obstructed by physical barriers between the built environment and the street, as outlined by Wallendorf (2014).

[4] Unpublished research work to which the author of this study contributed.

Exclusionary thresholds and façades fall under this paper's definition of exclusionary spatial measures and devices in urban public space and Robert Sobukwe Street presents itself as a promising study area to map and document such measures and devices in the City of Tshwane. Although secluded and exclusionary urban public space is evident throughout most of the present-day City of Tshwane, the heritage site of the National Museum of Cultural History makes for a second, specifically captivating study into the philosophy of the façade as a public interface, and the adaptive use of quasi-public space by public pedestrian users. As published on a heritage plaque by the building's entrance, the site is situated historically as "Pretoria's first prison, erected by the government of the *Zuid-Afrikaansche Republiek*… in 1873-1875" (**figure 9**). A prison programme was of course expected to entail behaviour-governing design measures. It was moved to a new home in 1907, and the Royal Mint opened on this site 13 years later.

Figure 9: Pierneef artwork of Pretoria's first prison (Engelbrecht et al. 1955)

The current museum (**figure 10**) lives in the shell of the old Mint and, as narrated by Jan van den Bos on the museum's website (DMSA n.d.), has become a palimpsest that conveys the architectural history embodied in its existence. Details of this palimpsest include room names of the Old Mint still kept intact in the new Museum, and hardy doors dating back to the war era when the Mint aided the country's ammunition production. The museum's stance on heritage preserved in physical space and the built environment concludes the article:

> *Places of cultural significance enrich people's lives, often providing a deep and inspirational sense of connection to community and landscape, to the past and to lived experiences. They are historical records that are important as tangible expressions of identity and experience. Places of cultural significance reflect the diversity of our communities, telling us about whom we are. They are irreplaceable and precious.*

Figure 10: Architect's rendering of the Museum's main entrance (KWP 1993)

The current nature of South African museums is the result of centuries of evolution. Humans have always had an interest in collecting and displaying odd curiosities for many reasons, including the education of future generations. The history of museums dates back to Greek Antiquity, and Geoffrey Lewis (2024) summarises its definition's evolution, from referring to a collection, to describing a building's programme, to publicly accessible information at large. During this extensive history, the role of the museologist remained neglected until as recently as the early 20th century. Their role demanded until recently that museum content, rather than museum design and curation, remains the main interface to users. The obtainment of such content was often the result of colonial raids, and until very recently museums remained a symbol of colonial triumph. This instilled a sense of patriotism and 'othering' in museum users – a characteristic that endorsed German Nazism (Lewis 2024), until museums finally introduced a counter-symbolism. The end of the Second World War attached a new meaning to museums, being that of reflection. Museums worldwide finally became a leisure activity, and, with the eventual recognition of the importance of museology and museum curation and design, many historically significant buildings have been adapted into museums. The article concludes in crucial considerations for museum design, involving close relationships with museum curation, and ultimately summarises museums' primary roles in conservation, documentation, research, exhibition and education.

2.5. The case study design

Yin (2014) confirms the case study as an appropriate methodological tool to research instances within a context as an attempt to explore its contextual relations and examples of intricate complexity. Cohen, et al. (2017) highlight important methodological steps to consider when embarking on a diligent case study, like the relay of chronological events and the qualitative description of actors to reach scientific validity. By Yin's definition, a descriptive case study narrates the situation in question (Yin 2014), while by Stake's definition, an intrinsic case study gives insight into a larger state of affairs (Cohen et al. 2017). Both types are appropriate for this study, as the findings from Robert Sobukwe Street aim to contribute to a

greater understanding of the City of Tshwane, while acting as an introductory study to that of other sites in the city. Ultimately, this follows the typical definition of the pilot case study method. While case studies are praised for their foundation in reality, and their ability to convey complexity, Nisbett and Watt warn against ungrounded generalisation of conclusions (Cohen et al. 2017). The authors respond to this through a concise list of recommendations on justified generalisation tactics. Conclusively, the case study becomes one of the fundamentals of making a value judgement, which is most appropriately executed when done as a derivative and comparative study of a pilot case study.

3. Research methodology

3.1. Research aims and design

The study aims to locate, identify, and document exclusionary spatial measures and devices in urban public space in the City of Tshwane, using the main pedestrian node of Robert Sobukwe Street in Sunnyside as a pilot case study. This study is used to formulate a contextual understanding of such instances as a description of the larger reality of the urban public space in the city. The pilot study becomes the foundation of a derivative case study of a descriptive and instrumental nature. The derivative case study aims to document the translation of spatial exclusion into the public interface of the Ditsong National Museum of Cultural History, on the corner of Bosman Street and Visagie Street.

3.2. Delimitations

The first step in recording exclusionary spatial measures in Robert Sobukwe Street is to delimit the search to spatial examples. Therefore, the case study does not focus on non-physical exclusion, like laws, landownership, financial status, etc. but rather aims to document the physical counterpart to these measures, like barriers, hostile signage, and damaged movement routes. ‘Spatial’ measures and devices are defined as any such measures and devices that have physical dimensions. Further, the focus is on spatial measures of a permanent, habitual, or otherwise consistent nature, and therefore excludes temporary measures like road maintenance closures, active construction sites, tree-felling, and so forth. The study is inevitably limited to observable measures, due to refrainment from public engagement. Therefore, measures like the deliberate application of oil onto seating areas to deter public resting are not included in this study, but are rather classified under the assumption of ‘lack of maintenance’. The study is limited to site visits during the day. Crucial data related to inclusionary and exclusionary lighting design is left out. Although the data collection in Robert Sobukwe Street seeks instances in any form of public space, the discussion thereof in the comparative study is limited to those relating to the public interfaces of urban architecture. From this delimitation, a forethought list of expected exclusionary spatial measures and devices (**table 1**) is compiled as a foundation from which to quantify instances found on site. The list is the result of a prior desktop study of the literature discussed above, and remains semi-structured, as in-situ changes are expected.

3.3. Methodology

Four categories of data emerged from the definition of exclusionary spatial measures and devices in urban public space: hostile, negligent, short-sighted, and non-action. The scope of hostile design is classified as such due to the conscious decisions that underlie the instances’ existence. Instances are classified as negligent when it is clear that the designers failed to consider the context’s needs diligently. Further, the category of short-sighted design shows a disregard for future growth. Lastly, the category of non-action simply refers to the lack of maintenance and repair.

Table 1: Preliminary list of expected exclusionary spatial measures and devices in Robert Sobukwe Street

ROBERT SOBUKWE STREET PILOT STUDY				
REVISION 1: EXPECTED exclusionary spatial measures and devices				
Category	**Code**	**Spatial measure description**	**Found**	**Action required for 2nd revision**
Hostile	1.1	Unhygienic surfaces	✓	Classify as negligent design
	1.2	Uneven/uncomfortable ground	✓	Remove repeated item
	2	Anti-skating devices	X	Remove unfound item
	3	Anti-sitting devices: spikes	✓	
	4.1	Controlled access: roller-shutter doors	✓	Sketch, but don't quantify
	4.2	Controlled access: palisades	✓	Sketch, but don't quantify
	4.3	Controlled access: low fences	✓	Amalgamate with 'palisades'
	4.4	Controlled access: bollards	✓	
	4.5	Controlled access: trellidoors	✓	Amalgamate with 'palisades'
	4.6	Controlled access: turnstiles	✓	
	5.1	Unergonomic surfaces: awkwardly high steps	✓	Rename
	5.2	Unergonomic surfaces: standing-seats	✓	Rename
	5.3	Unergonomic surfaces: slatnted seating	✓	Extend to all slanted surfaces
	6.1	Wheelchair inaccessibility: uneven surfaces	✓	Remove overly abundant item
	6.2	Wheelchair inaccessibility: steps by entrances	✓	
	6.3	Wheelchair inaccessibility: vehicle barriers that inhibit wheelchairs	✓	
	6.4	Wheelchair inaccessibility: substandard ramps	✓	
	7	Inaccessibility for the visually impaired	✓	Remove overly abundant item
	8	Noise devices	X	Remove unfound item
	9	Surveillance cameras	✓	
	10	Signage that disallows certain behaviour	✓	Rename
	11	Hostile landscape: no set route	✓	Remove overly abundant item
	12	Palisades, hard barriers	✓	Remove repeated item
	13	Hostile lighting	?	Revisit at night
	14	Anti-photography measures	X	Remove unfound item
	15	Barred storefronts	✓	Remove repeated item
	16	Burglar bars	✓	Remove repeated item
	17	Public restroom restrictions	X	Remove unfound item
Negligent	18.1	Unadaptable vendor stands	✓	
	18.2	Buildings without public squares	✓	
	19	Lack of multi-sensory spaces	X	Remove unfound item
	23	Lack of shade	✓	
	20	Uneven paving	✓	Remove overly abundant item
Short-sighted	21	Failure to plant/conserve trees	X	Remove unfound item
	22	Hard landscapes on ageing tree roots	✓	Rename

The preliminary list is used to eliminate or confirm the desktop-based predictions, and to quantify such instances on site. This quantitative process is centred around the pedestrian, and therefore entails walking along the sidewalks of Robert Sobukwe Street, from the western side where it crosses Greef Street to the eastern end of the street at the T-junction on Bourke Street. This walk is done separately for the northern sidewalks and the southern sidewalks. Data is collected through the manual plotting of instances onto printed maps and the in-situ adaptation of the list of exclusionary spatial measures and devices found on site. The process is eased through digital photography, hand sketches, and site notes. Off-site, the preliminary list is adapted to a second revision to prepare for a second data collection phase (**table 2**).

Table 2: Second list of instances based on site visits and findings

ROBERT SOBUKWE STREET PILOT STUDY						
REVISION 2: FOUND exclusionary spatial measures and devices						
Category	**Code**	**Spatial measure description**	**Found**	**Mapped**	**Sketched**	**Action required for 3rd revision**
Hostile	H1	Unhygienic surfaces	✓	✓	✓	Reclassify as 'non-action'
	H2	Anti-sitting spikes	✓	✓	✓	
	H3	Standing seats	✓	✓	✓	Rename 'uncomfortable seat heights'
	H4	Unergonomic surfaces	✓	✓	✓	Rename 'counter-ergonomic inclines'
	H5	Slanted surfaces	✓	✓	✓	
	H6	Roller shutter doors	✓	X	✓	Reclassify as 'other'
	H7	Fences	✓	✓	✓	Amalgamate
	H8	Low fences	✓	✓	✓	
	H9	Bollards	✓	✓	✓	
	H10	Trellidoors	✓	X	✓	Amalgamate with 'fences'
	H11	Turnstiles	✓	✓	✓	
	H12	Wheelchair-inaccessible ground surfaces	✓	X	✓	Remove overly abundant item
	H13	Entrance steps	✓	✓	✓	Rename 'inaccessible thresholds'
	H14	Wheelchair-inaccessible vehicle barriers	✓	✓	✓	Reclassify as 'negligent'. Rename
	H15	Substandard ramps	✓	✓	✓	
	H16	Surveillance cameras	✓	✓	✓	
	H17	Intrusive signage	✓	✓	✓	
	H18	Hostile lighting	?	?	?	Recommend for future research
	H19	Enclosed unsafe spaces	✓	✓	✓	Reclassify as 'negligent'
	N20	Car-centric spaces	✓	✓	✓	
	H21	Fences above street level	✓	X	✓	Reclassify as 'other'
	H22	Façade disconnects the interior	✓	✓	✓	Rename
Negligent	N1	Unadaptable vendor stands	✓	✓	✓	
	N2	Buildings that create no urban public space	✓	X	✓	Rename
	N3	Lack of shade	✓	✓	X	Remove overly abundant item
	N4	Entrances with unsafe appearances	✓	✓	✓	Rename
	N5	Exclusion of tall people	✓	✓	✓	Rename
	N6	Lack of seating	✓	✓	✓	
Short-sighted	S1	Outgrown tree rings	✓	✓	✓	
Non-Action	NA1	Broken bins	✓	✓	✓	
Other	O1	Active security guards	✓	✓	X	

The second phase exists to scrutinise the expectations of the first phase, to observe the area at a different time of day and week, and to revisit any overlooked instances. When both data collection site visits have been completed, the physical maps are converted to digital maps using the ArcGIS software[5]. A chosen set of information is attributed to each digitally plotted instance, like its category of exclusion and a thorough description. In parallel, different varieties of instances are sketched, described, and dimensioned as deemed appropriate, to ultimately arrive at a visual lexicon of exclusionary spatial measures and devices in urban public space in Robert Sobukwe Street, Tshwane. The completion of the data collection phase necessitates a final revision of the list of instances, the reconsideration any incorrect predictions and illogical classifications, and the introduction of a fifth category of measures found on site, titled ‘other’. This involves instances that could fall outside of this study’s delimitations, subject to interpretation.

The conclusion of the pilot case study produces three documents: the list of instances (**table 3**), the visual lexicon (**appendix A**), and the set of maps (**appendix B**). These become the main informants for the derivative study in Visagie Street.

[5] A tool for geolocation on an online database, to which future studies can add.

Table 3: Final list of exclusionary spatial measures and devices present in Robert Sobukwe Street, with revised categorisation and quantities indicated.

ROBERT SOBUKWE STREET PILOT STUDY					
REVISION 3: ANALYSED exclusionary spatial measures and devices					
Category	Code	Spatial measure description	Mapped	Sketched	Qty
Hostile	H1	Anti-sitting spikes	✓	✓	4
	H2	Substandard steps	✓	✓	4
	H3	Uncomfortable seat heights	✓	✓	7
	H4	Counter-ergonomic inclines	✓	✓	3
	H5	Fences	✓	✓	
	H6	Bollards	✓	✓	12
	H7	Turnstiles	✓	✓	3
	H8	Inaccessible thresholds	✓	✓	13
	H9	Substandard ramps	✓	✓	6
	H10	Surveillance cameras	✓	✓	74
	H11	Intrusive signage	✓	✓	5
	H12	Car-centric spaces	✓	✓	1
	H13	Disconnecting facades	✓	✓	12
Negligent	N1	Unadaptable vendor stands	✓	✓	15
	N2	Buildings creating no urban public space	X	✓	
	N3	Entrances with unsafe appearances	✓	✓	2
	N4	Exclusion of tall people	✓	✓	1
	N5	Lack of seating	✓	✓	
	N6	Wheelchair barriers	✓	✓	
	N7	Enclosed unsafe spaces	✓	✓	3
Short-sighted	S1	Outgrown tree rings	✓	✓	22
Non-Action	NA1	Broken bins	✓	✓	8
	NA2	Improper drainage	✓	✓	6
Other	O1	Active security guards	✓	X	8
	O2	Fences above street level	X	✓	
	O3	Roller shutter doors	X	✓	

The delimitation of the derivative study restricts the search for exclusionary spatial measures and devices to those that affect the performance of the public interface of the Ditsong National Museum of Cultural History. This is simultaneously a reduction in scale and an increased interest in qualitative data, as the derivative case study attempts to describe the interaction between the building and the exclusionary instances in and around it.

The derivative study is based on three site visits to the Ditsong National Museum of Cultural History. The list acquired in the pilot study aims to inform the data collection process more qualitatively than quantitively. With the aid of digital photography on site and a prior desktop study, exclusionary spatial measures and devices at the Ditsong National Museum of Cultural History are mapped manually on site. A crucial difference between the quantitative data collected in the pilot study and the qualitative data collected in the derivative study is that the exclusionary spatial measures and devices found in the pilot study are analysed in isolation and in reference to their physical attributes, where those at Ditsong are further analysed in reference to existing literature and their experiential attributes. This rudimentary analysis is fundamental to the sketching and defining of exclusion at a qualitative level. Subsequently, instances are sketched and listed following a similar methodology to that of the pilot study. The derivative study produces a list of instances of exclusionary spatial measures and devices found at the Ditsong National Museum of Cultural History (**table 4**), and an in-depth analysis of the qualitative aspects of their presence.

Table 4: List of exclusionary measures at the Ditsong National Museum of Cultural History and instances' correlation to those found in Robert Sobukwe Street

DITSONG NATIONAL MUSEUM OF CULTURAL HISTORY DERIVATIVE STUDY				
List of exclusionary spatial measures found on site				
Category	Code	Spatial measure description	Qty	Found in pilot Study
Hostile	H1	Anti-sitting spikes	3	✓
	H2	Exhausting ramps	2	✓
	H5	Multi-fencing	3	✓
	H10	Surveillance cameras	7	✓
	H13	Disconnected building interior		X
	H14	Narrow sidewalks		X
	H15	Impermeable boundary fences		X
	H16	Access control through signage	2	X
Negligent	N5	Negligence in the provision of seating		✓
	N8	Bird droppings and other unmaintained instances		X
	N9	Inaccessible museum content		X
	N10	Minimised public interiors		X
	N11	Unnatural public interior spaces		X
Short-sighted	S2	Visual connotation to the voortrekker culture	1	X
	S3	Hidden interior programme		X
Non-Action	NA3	Outdated public infrastructure	5	X
Other	O1	Active security	1	✓
	O4	Façade that is daunting		X
	O5	Façade made inaccessible through physical distance		X

Upon conclusion of the data final collection phase, the data of both studies are analysed in an attempt to identify and clarify connections between public users and the public interface of the analysed spaces. This process entails the informed dismissal of instances that are unrelated to the spaces' public interface, and discussion of each retained instance at a depth proportional to its influencing potential.

3.4. Ethical considerations

A limitation that exists in the data analysis process is that this study maintains architecture and urban design as the subject of interest, and therefore the analysis is informed purely by architectural knowledge and research. The inclusion of public opinion in a similar future study is greatly recommended if adequate considerations for ethics are followed.

3.5. Reliability, validity, and replicability

In arguments attempted at proving that certain spatial measures are indeed exclusionary, this study finds reliability in existing literature, as reviewed above. The validity further lies in the aim of the project which is simply to expose new examples of exclusionary spatial measures and devices to the definitions provided in existing literature, and to classify these in newly defined categories for future research. Future researchers are enabled to replicate the pilot study through following the above-mentioned procedures. The design of derivative study enables future researchers to replicate the study through following the data analysis example in this paper. Executing this on other sites will seamlessly build on this study.

4. Results

The two studies display a collection of similarities and differences. To analyse these, it is important to investigate the contexts in a holistic manner, and the constituent exclusionary spatial measures and devices in depth.

4.1. Pilot case study: Robert Sobukwe Street, Sunnyside

Figure 11: Map of Robert Sobukwe Street (Google Earth 2024)

Robert Sobukwe Street (**figure 11**) is a lively street with plenty of pedestrian activity at all times of the day. The architecture on both sides of the street forms a consistent language along its span, with medium-height residential buildings (**figure 12**) of around four to six storeys in height cramped onto the street on top of a predominantly retail ground floor programme. Other typologies, like the mall, exist amongst these as exceptions. The street is a two-way, single-lane road that generally has parking bays on both sides before stepping onto a broad sidewalk. The sidewalk on the southern side of the street is much wider than that on the north and, despite this, most pedestrian activity is limited to the north. Both sidewalks are partially covered by broad overhangs that accommodate signage for the retail programmes, shading, and visually separates the residential storeys above from the retail ground floor. The majority of the street's users are pedestrians utilising it as a thoroughfare and trading core. Many of the users are working-class residents in the area, with lower economic income. The area of investigation ranges across the public interfaces of multiple privately and publicly owned buildings and owned and rented retail spaces.

Figure 12: Street typology in Robert Sobukwe Street (Google Earth 2024)

Despite the bustling public nature of the street, exclusionary spatial measures and devices exist in plain sight and still control and restrict the general public. The instances found on Robert Sobukwe Street range in visibility, austerity, and design intent and are analysed in response to their social presence in a place's public interface.

The following instances are classified as "hostile design" (Rosenberger 2019: s.p.) due to deliberation in design choices, and are analysed below: anti-sitting spikes (**figure 13**), substandard steps (**figure 14**), uncomfortable seat heights (**figure 15**), counter-ergonomic inclines (**figure 16**), fences, bollards, turnstiles, inaccessible thresholds, substandard ramps (**figure 17**), surveillance cameras (**figure 18**), intrusive signage, car-centric spaces, and disconnected façades (**figures 19 & 20**).

Anti-sitting spikes (**figure 13**) are an aggressive hostile measure that prohibits any user from using a ledge at a human scale. They prohibit sitting, leaning, and stepping on ledges and therefore prohibit the democratic use of this architectural element. Intention is often downplayed as a reactionary measure against bird droppings, which is a reckless excuse when the spikes are more commonly experienced at a human scale than not. It can further be argued that ledges can act as a stepping device for a burglar or trespasser. However, this argument is debunked as none of the instances are found near an entry point of any private property. Hostility toward humans is proven in the height of the installations, that are only found at seating height, and in the blatancy of intent, which is explicitly aimed at users who wish to rest or linger.

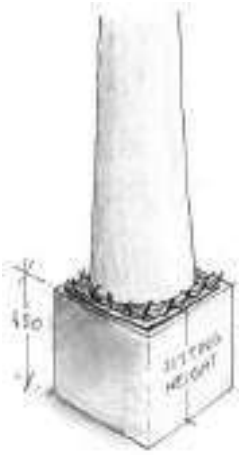


Figure 13: Anti-sitting spikes

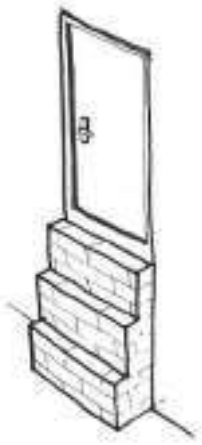


Figure 14: Sub-standard steps

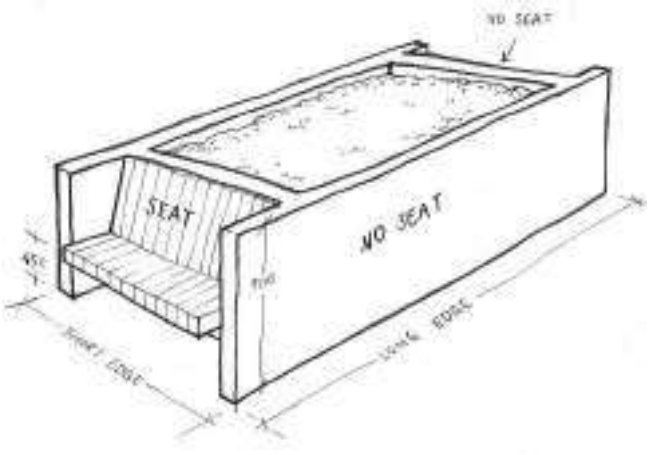


Figure 15: Negligence and hostility in providing seating only along the short edge of an urban public intervention

The implementation of substandard steps (**figure 14**) in urban public spaces lies on the border of negligence, but is classified as deliberate, since architectural professionals are expected to condemn substandard construction. Substandard steps found on Robert Sobukwe Street include steps that exceed the maximum step height, or do not comply with minimum tread depths, as well as stairs that have unequal dimensions. These are tripping hazards, or inaccessible for people with even mild impairments.

Both hostility and negligence are seen in the designing of uncomfortable seat heights (**figure 15**), where the opportunity for good urban public seating was missed or ignored. The consequence is that people are prohibited from resting or lingering in an urban public space. Such instances include surfaces that could have easily been seats, but are instead very obviously uncomfortable. These instances often exist as tall planter walls that mobile users could lean against or jump onto to use them as seats.

Similarly, counter-ergonomic inclines (**figure 16**) are instances where designers could have changed the angle of an architectural element, like a planter coping, a windowsill, or a column base, to incorporate a seat, but instead ignored the opportunity to do so. Such angles are easily disguised as a response to control rainwater, which shows ignorance as water needs as little as a 1:100 runoff slope, while instances are found to be as steep as 1:1.

The fencing in of spaces by ownership is an extremely prominent tactic in Robert Sobukwe Street and in the City of Tshwane at large. Although the instances found in Robert Sobukwe Street are more limited than expected, they remain hostile, with multiple fencing measures imposed onto a single instance. Fences separate the ground floor from higher floors, while gates and turnstiles separate it from the street.

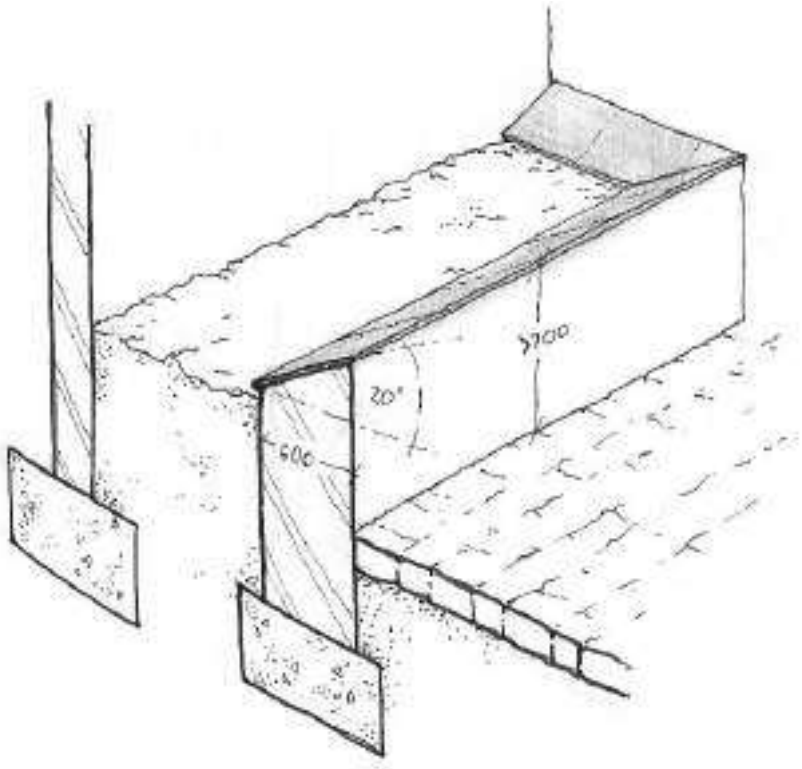


Figure 16: Surfaces made purposefully uncomfortable to sit or lie on

Although bollards are typically understood to exercise control over vehicles, a handful of instances in this study show hostility toward pedestrian users. Instances where the gaps between bollards are too narrow for trolleys or wheelchairs, or where bollards are a tripping hazard, become hostile interventions that dictate the movement path of certain pedestrian users.

Entrance thresholds are found to be inaccessible when the necessary weather step excludes users who move on wheels. Further, ramps are often installed in a deemed-to-satisfy manner (**figure 17**), leading to neglect in maintenance or usability when inspections have been passed. Through this they become a false sense of accessibility for dependant users.

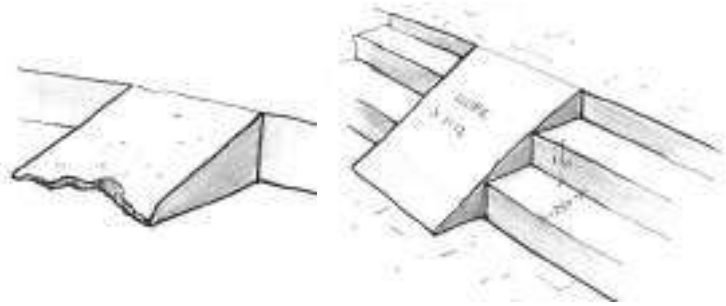


Figure 17: Haphazardly installed or unmaintained ramps

Figure 18: Surveillance cameras

By far the most prevalent instance is the presence of surveillance cameras (**figure 18**). Some of these are installed in a manner that clearly boosts in a shop owner's feeling of safety, but many of the surveillance cameras watch the street instead. Instances that are hidden in plain sight, as well as the blatantly visible instances, contribute to a feeling of being under constant watch, and influence the behaviour of particular pedestrians. Furthermore, any potential danger is consolidated into the blind spots that the arrangement of cameras leaves. These areas, that pedestrians access inevitably, or where unhoused individuals might seek undisturbed rest, are now hotspots for vulnerable individuals to become victims.

The presence of excessive signage is not discussed in this paper, as no hostile signage is found. Signs that prohibit certain behaviour exist in Robert Sobukwe Street – not to the pedestrian's detriment, but to control the movement of vehicles or as an effort to prevent crime. Otherwise, the consumerist tendency of the street media clutter, with advertisements on every possible surface, deserves an independent investigation with acuteness for the area's proletariat users.

Car-centric spaces are classified as deeply hostile and absolutely exclusionary, as the study focuses on pedestrian users. Spaces like drive-thrus are intrinsically car-centric, since they force any non-driving users to walk across vehicle lanes. They often prohibit vehicle-owners from exiting the site on foot, and prohibit pedestrians from using or lingering in large portions of the site.

The final typology listed under the 'hostile' category describes instances where architecture is designed to, deliberately or through negligence, isolate the interior of a building from the public. This is surprisingly common in more public interior programmes, like retail stores, where a minimised entrance threshold results in extensively long, blunt walls with no doors or windows for the public to have even a glance at the interior (**figure 20**). It is also common in restaurants that present themselves as more upmarket than the other food traders on Robert Sobukwe Street, who then minimise their window openings and raise their floor level unnecessarily high (**figure 19**). These instances contribute to an insider-outsider mentality.

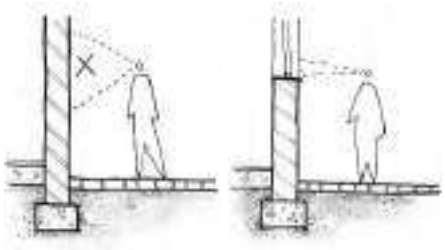


Figure 19: Windows omitted or heightened to minimise public contact

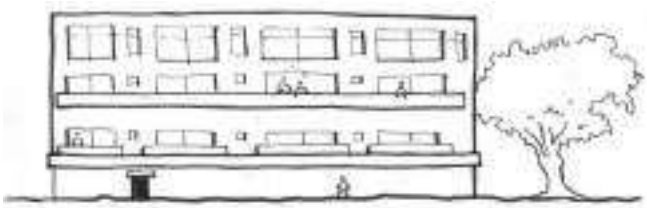


Figure 20: Extensive lengths of façades are impermeable at ground floor level, limiting private-public contact

The following instances are analysed as exclusionary spatial measures and devices resulting from negligence: unadaptable vendor stands, buildings creating no urban public space (**figure 21**), entrances with unsafe appearances, exclusion of tall people, lack of seating, wheelchair barriers (**figure 22**), and enclosed unsafe spaces.

Vendor stands that have been installed onto the sidewalks are widely used by the traders on Robert Sobukwe Street. Their inadaptability seems to be a theft-proofing measure, yet their forced removal doesn't lead to their departure from the street, but rather to their relocation to less negligent placement. This instance is not analysed in this report, since vendor stands are an independent intervention that form part of public infrastructure and do not comprise any one architectural artefact's public interface.

Negligence is evident in most of the street, where buildings are designed to follow the building line instead of creating urban public space on the street interface. Three exceptions exist: Sunnyside Galleries[6] creates urban public space that has since been the victim of other exclusionary spatial measures and devices, the building on the northern corner of Robert Sobukwe Street and Bourke Street cuts back on its building line by a metre or so, widening the sidewalk to a trading platform, and the Huurkor Building that used to be the Volkskas Bank[7] was recessed from its building line to create a public square that has since too become the victim of an array of exclusionary spatial measures and devices.

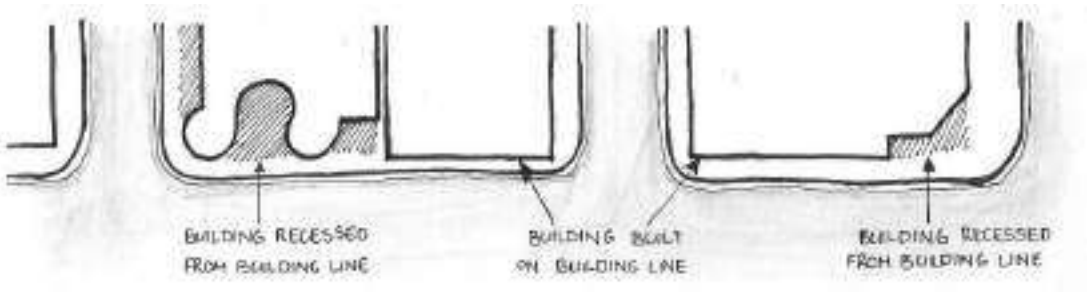


Figure 21: Two examples of buildings designed to facilitate spatial democracy within their site boundaries

The public ground floor typology of the street creates the need for a private entrance for residents to access the upper floors. These entrances are often negligently considered, resulting in dark alleys where certain users may not feel safe to enter or pass at certain times of the day.

Some instances on the street cause tall people to duck to prevent bumping their heads. A more diligent consideration of a wider user group could have prevented this. This instance is not discussed in this paper, as the instances found are minimal and comprise public infrastructure, like road signs, and not the public interface of any one architectural artefact.

The lack of seating is a negligent instance seen in the City of Tshwane at large. These instances are characterised as areas that evidently have enough space for comfortable seats, but where architectural designers neglected to provide such. Robert Sobukwe Street has desperate need and excessive potential for public seating solutions, but almost no provision thereof. Only extremely blatant instances were mapped and sketched, but the entire street suffers from this instance.

[6] A rounded Modern Movement building designed by architect Paul Voutsas.
[7] A mosaiced Modern Movement building designed by architect Samuel Pauw.

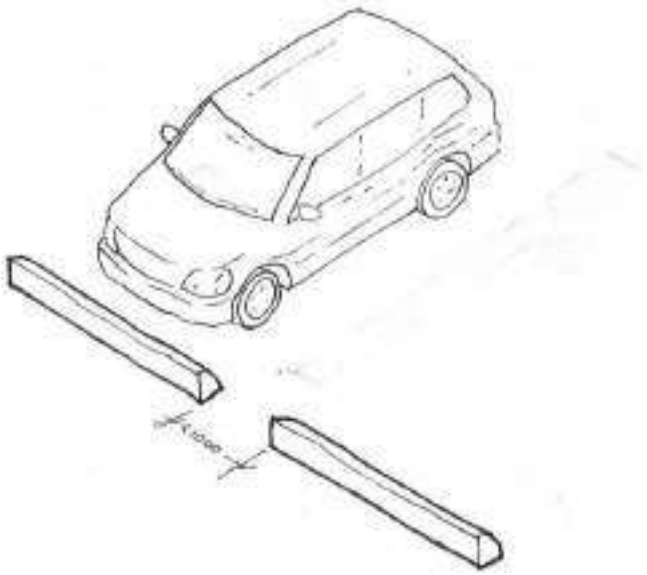


Figure 22: Vehicle barriers prohibit users who move on wheels

Existing as somewhat of a spin-off from the exclusionary bollard instance described above, some vehicle kerbs are installed in such a way that pedestrians on wheels are prohibited in the same way vehicles are (**figure 22**). This is not a hostile measure but shows a lack of consideration for a diverse pedestrian user.

The final negligent instance found on Robert Sobukwe Street is the enclosure of unsafe spaces. It shows the fence owner's negligence in acknowledging that certain users might feel less safe in certain areas than others. While presenting as a thoroughfare, some fences are found to limit a passer-by to a single, unstrategically placed exit point when passing a space with potential personal safety risks.

Only one instance is classified as short-sighted design causing exclusion. The entire street is outlined with large and iconic trees that have outgrown their tree rings. Short-sightedness in the tree-ring design leads to the uprooting of pavement and renders many floor surfaces hostile.

The next category describes instances where non-action leads to spatial exclusion. Broken bins and improper drainage fall under this category. Public bins that had been installed by the government have since been damaged or stolen, which renders them unusable. The lack of repair and replacement causes rubbish to disperse into the streets, reducing their hygienic quality and posing as a comfort and health concern for pedestrian users. Similarly, improper drainage of public ground surfaces leads to the unhygienic puddling of liquids, preventing pedestrian users from freely roaming the sidewalks.

The final category of exclusion is described as 'other'. This classification is due to the unique character of the three instances in this category: active security guards, roller shutter doors (**figures 23 & 24**), and fences above street level.

Active security guards are contestable as a spatial measure towards exclusion, as they are not objects and their existence is not at the hands of designers. However, they exercise consistent control over the free access that particular individuals have to particular spaces. Further, the parties that implement other exclusionary spatial measures and devices, like fences and surveillance cameras, often appoint active security guards under the same agenda.

By definition, roller-shutter doors exist to exclude people. However, it is unrealistic to describe a shop-owner's need to protect their belongings from theft as hostile. Roller-shutter doors are discussed in this paper as a neutral instance that exists on the border of personal safety and public exclusion. Individually, they are a measure that converts a shop's entrance to a transformable threshold that is overtly inclusionary upon demand. However, in unison, an entire street with exposed steel shutters and visible locks can easily instil in a more vulnerable user a sense of anxiety.

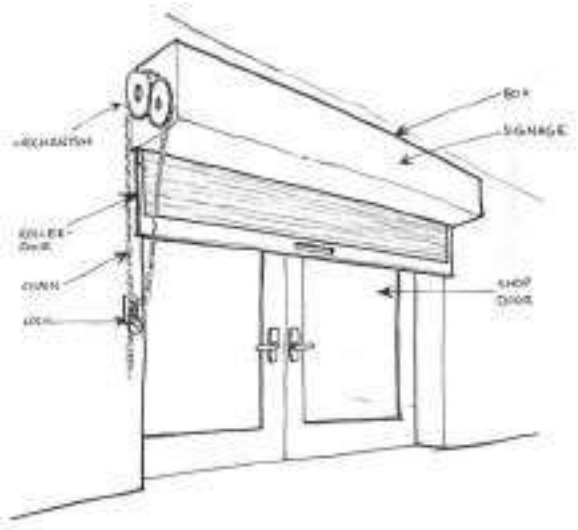


Figure 23: Parts and functions of a typical roller-shutter door in Robert Sobukwe Street

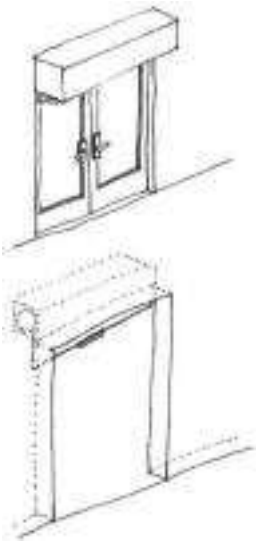


Figure 24: Exposure tactics used in the installation of roller-shutter doors

Similarly, some spikes and fences that are installed at upper floors exist only to exclude trespassers and therefore cannot be classified as exclusionary towards a typical ground-floor pedestrian user. However, some users might feel anxious when observing such defensive measures and these fences are therefore worth a discussion.

Figure 25: All exclusionary spatial measures and devices in Robert Sobukwe Street, Sunnyside (Wolmarans 2024)

4.2. Derivative case study: Ditsong National Museum of Cultural History, Pretoria CBD

While the pilot study in Robert Sobukwe Street comprised a conglomeration of dense and diverse public interfaces that cooperate to form an exclusionary streetscape, the derivative study at the Ditsong National Museum of Cultural History investigates the public interface of a single publicly owned property. The instances found at the Ditsong National Museum of Cultural History are analysed much more holistically than those found in Robert Sobukwe Street.

The city block that houses the Ditsong National Museum of Cultural History (**figure 26**) is a low-density city block shared with the old fire station (which will not be discussed in this study). It is almost devoid of all pedestrian activity apart from that passing the southern enclosed edge of the site. The site contains five buildings, including the museum building, and lavish landscape design amongst these. The museum is by far the largest building, with its square footprint at nearly 10 000 m^2, and its façades at approximately 10m tall (from the outdoor ground level on the northern side of the building). All other buildings on the site are heritage buildings and only one of these remains usable as an open *lapa*[8]. The entire site is fenced off from all surrounding streets, which converts this previously public urban space into a pseudo-public[9] urban space. The only remaining public entry point is a vehicular entrance in Visagie Street to the north, which passes the site as a pedestrian-unfriendly one-way road. Schubart Street to the west follows a similar, yet harsher, typology, while Bosman Street to the east services the staff entrance and ex-fire station. The site exists in this exclusionary manner despite the high influx of pedestrian users around it. Minnaar Street to the south of the site is the only two-way and pedestrian-friendly street. Pedestrians travel to and from the *cul-de-sac* on the west of this street in routes circumnavigating the enclosed sites that pave the way to the city's centre. Users pass the site in daily transit or use adjacent areas for informal trading similar to the users of the nearby Robert Sobukwe Street.

Figure 26: Aerial photograph of the site containing the Ditsong National Museum of Cultural History (large white-roofed building) and surroundings (Tshwane n.d.)

[8] A covered outdoor patio that is either attached to or detached from a main building and used for gatherings.
[9] Urban public space that appears to be publicly accessible, but is instead subject to access-control

The following exclusionary spatial measures and devices are found at the site of the Ditsong National Museum of Cultural History and display relation to the public interface of either the building or the site at large: fenced edges and harsh barriers (**figure 27**), active security, disconnected interior, daunting façade, anti-sitting negligence and anti-sitting hostility (**figure 29**), negligently designed ramps (**figures 30 & 31**), uncomfortable steps and seat heights, multi-fencing, unhygienic surfaces, surveillance cameras, intrusive signage, delegitimised sidewalks (**figure 28**), forced movement routes, and lack of maintenance in pedestrian movement routes. The context of this derivate study necessitates the division of instances into two categories: those found in the interface between the fenced site and the true public, and those found in the interface between the buildings on site and the pseudo-public outdoor space found inside the boundary fences.

Figure 27: Boundary fences around the Ditsong National Museum of Cultural History. From left to right: the main entrance gate, the closed-off southern entrance, and the north-western street edge.

The most prominent exclusion of the general public happens with the fencing in of the museum site. This is also the only measure in this derivative study classified under the 'hostile' category. The streets on all edges of the site are fenced off, pushing pedestrian movement past the site instead of through it, as was originally intended. The public is, however, permitted to perform activities on the site in a pseudo-democratic manner, only if they enter through the single vehicular entrance, and only as approved by the active security guard.

A negligent exclusionary spatial instance exists in the periphery of the site, where sidewalks are wide enough for comfortable movement, but not wide enough for any programmatic value, and not maintained well enough to be considered inclusive. Sidewalks are also illegitimised by fences, parked cars, exhausting distances along the bulk end of the superblock[10], bollards, and the like.

Figure 28: Illegitimised sidewalks. From left to right: fences and unkept landscaping at the Old Fire Station, unkept grass at the *cul-de-sac*, tripping hazard at the corner of Visagie and Sophie de Bruyn Streets.

[10] Pretoria's city blocks were originally planned to be small homesteads accessible by ox-wagon. This planning evolved into the City of Tshwane having broad streets and massive city blocks that are often broken up with arcades.

Figure 29: Anti-sitting spikes at the Station Square Mall

Surrounding blocks suffer from the same measures and devices, where anti-sitting spikes and negligence in the lack of seating are present at the public interfaces of the Pretoria City Hall (neighbouring site to the immediate east), and the Station Square Mall (to the east of the Bosman taxi rank). The walkability of these blocks is deteriorated by a general lack of maintenance, which further perpetuates forced movement routes. This is evident in examples like the overtly unkept landscaping at the *cul-de-sac* to the south of the museum site that operates as an informal taxi drop-off zone. Pedestrians are not only disenabled from moving with ease across the unkept grass, but generally discouraged from lingering by exclusionary instances, like the unhygienic conditions at fence recesses, the multi-layered fencing, and the surveillance cameras present in these areas.

Due to the pseudo-public nature that the fenced site adopts, the other buildings and landscaping on site are analysed as if they were publicly accessible. The buildings on site disconnect their interiors from the surrounding landscaped areas, through the incorporation of tall façades with minimal openings to reveal or access the interior programme. The museum building does so most methodically, while the other buildings on site do so through their locked doors and abandoned interiors. The stark façade of the museum building excludes the pedestrian users of the street from feeling equal to users of the interior of the building, where the other buildings on site do not have this effect.

Figure 30: Extensively long entrance ramp of museum building, with no landings. The light blue hand rails are not grabbable and are covered in bird droppings, while the small, brown ones are an afterthought that limits use to a separate area.

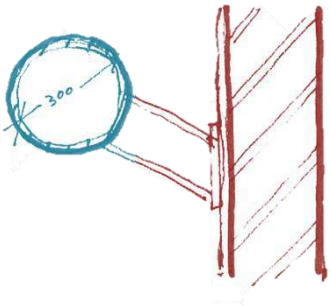


Figure 31: Section of light blue handrail with a 300mm diameter, where grabbable handrails require a diameter of less than 50mm

Uncomfortable seats and missed seating opportunities at the museum building's interface with the pseudo-public spaces on site are in accordance with such instances discussed in Robert Sobukwe Street.

Although substandard ramps are found in Robert Sobukwe Street and described above, ramps found at Ditsong seem to comply with minimum standards, but show negligence in their ease of access and the dignity that they allow for their users who move on wheels[11]. The excessively long ramps leading from the parking to the museum's first floor entrance have no landings and are equipped with minimal grabbable handrails. This excludes ramp users who prefer independent (i.e. handrail-dependent) use of the ramp over caretaker assistance.

The last exclusionary measure found on this site – intrusive signage – is not discussed in this paper as intrinsically exclusionary. It does, however, influence pedestrian behaviour and people's tendency to linger in the building's interface.

4.3. Comparison

A crucial observation is that the exclusionary spatial measures and devices found in Robert Sobukwe Street, and their impact on the pedestrian users of Sunnyside are much more callous and the environment far more brutal than the conditions at the Ditsong National Museum of Cultural History. However, Robert Street exists as a street that has a presently active pedestrian sphere, while the pedestrian activity along the site of the Ditsong National Museum of Cultural History is suffocated by prior car-centric and fear-led urban intervention. This difference in severity of the two instances necessitates their analyses to occur at unique levels that support the quantitative nature of the observations in Robert Sobukwe Street and the qualitative nature of those at the Ditsong National Museum of Cultural History, respectively. Despite the different lenses through which the findings are documented, both studies show that exclusionary spatial measures and devices in urban public space in the City of Tshwane influence pedestrian behaviour.

5. Discussion

Urban design is a powerful tool for control (Strauss, 2019). On a larger scale, cities can be designed to be exclusionary to particular social groups, as was seen in South Africa's Apartheid past. Harsh barriers that characterised urban planning during Apartheid were epitomised in the planning of Pretoria (Bernstein & McCarthy 1998), splitting the city into a dually legal and functional existence. Post-1994 integration strategies attempt to cross or erase both physical and social barriers on this scale but seem to ignore the shift to smaller scale exclusion that is on the uprise. The initial spatial injustice resulting from segregated urban planning in South African cities was dwarfed by the circumstances that followed the systematic institutionalisation of spatial segregation by social differences (Strauss 2019). This relationship between personal beliefs (small-scale interventions), and national legislation (large scale implications) was exhibited in spatial segregation during the Apartheid regime in phenomena like "sanitation syndrome", "moral panic", and "racial hysteria" (Strauss 2019:141), while the present-day situation in the City of Tshwane showcases fear-led design as an indisputable instigator of spatial segregation (Landman 2017). Such small interventions, like the instances analysed in Robert Sobukwe Street and at the Ditsong National Museum of Cultural History, together with other instances like gated communities (subject to future study), are examples that provoke the succession of a new Apartheid, one driven not by racism, but by classism, and governed by the same fundamentals as those of Apartheid: "the use of fear,

[11] Although often mistaken as being limited to wheelchair users, many other users also depend on wheels, like trolley-pickers, people with luggage, parents with prams, vendors with carts, children with toy cars, etc.

inside-outsider exclusion, and spatial resettlement" (Landman 2004:12). Rongue (2003:6), amongst many other South African critics, maintains:

> *… history is repeating itself. We are dealing with a situation in which a certain group of people are forbidden to be in particular areas after a given time at night. They may also not walk the streets in those areas unless they have specific permission to do so. Am I the only one who hears an echo of the bad old days when the curfew and the dompas were enforced to keep black people off the streets in white neighbourhoods?*

The abovementioned agenda is, however, more blatant in some instances than other. Integration efforts that move previously marginalised communities into previously whites-only areas, like Sunnyside and Pretoria CBD, fail to prevent what authors like Crowder and South (2008: s.p.) describe as "white flight". This phenomenon is systematically observed in South Africa. It describes white communities that move away from 'integrated' areas and sometimes, more abominably, continue to rent out property in these areas to the financially disadvantaged people who strive for liberation from marginalised communities. Land-ownership has been an uncompromising tool for control since before the founding of the Union of South Africa and remains so today. Where the past legally prohibited non-whites from owning land, this restriction is now afflicted onto those who don't have the financial capacity to do so. The realms of previously racially disadvantaged groups and the currently financially disadvantaged groups have major overlaps and correlations caused by direct and conscious influence of South Africa's (previously white and presently wealthy) bourgeoisie.

The personal decisions of property owners in Sunnyside are witnessed in the existence of the exclusionary spatial measures and devices found in urban public spaces along Robert Sobukwe Street. Exclusionary intentions are, however, evidently aimed not towards property owners or even tenants, but to a more anonymous public. Spatial decision-makers, which are in Robert Sobukwe Street the owners of the buildings, perpetuate the insider-outsider mentality that Spinks (2001) warns about through allowing certain users feelings of belonging, while condemning others to feeling excluded. Surveillance cameras become an exemplary instance that simultaneously provokes in some individuals a sense of safety while provoking in others the feeling of being targeted. When Landman (2004) writes on the symbolic meanings behind exclusionary spatial measures and devices, she critiques the accuracy with which security guards at gated communities are equipped to judge an individual's criminal tendencies. Groups or individuals who are habitually considered to look suspicious are sure to feel anxious amongst a sea of surveillance cameras as is found in the City of Tshwane.

Figure 32: 'SafeCity' surveillance cameras installed across Tshwane (VumaCam 2023)

Of course, surveillance cameras are the epitome of fear-led responsive design (Landman 2017), and their implementation is not limited to private interventions, but is extended into public governance, like the 'SafeCity' security cameras (**figure 32**) that are seen appearing all over the City of Tshwane.

The necessity to explore the connection between ownership of (and responsibility for) exclusionary spatial measures and devices in urban public space, and their impact on publicness becomes evident when the lines between public and private become blurred. An interesting irony is emerging in our cities: private enclosed spaces, like malls and gated communities, start mimicking good public design in their interior, while public spaces outside these private entities start to resemble private spatial design (i.e. inappropriate public spatial design). In the words of Richard Wolf: it is socialism for the rich and cold hard capitalism for the poor. Unnerving consequences arise from this, as de Magalhães (2010:569) warns against the degradation of publicness when urban public space becomes governed in a private capacity: "[r]esearch demonstrates that particular social groups are less likely to use public parks and therefore less likely to get involved in their management". It becomes blatant that the responsibility for existing exclusionary spatial measures and devices in urban public space in the City of Tshwane is at the hand of a very small group of investors: property owners, and individuals belonging to groups that show managerial interest in (pseudo) public spaces.

At the mercy of existing legislation, most urban scale exclusion is the result of town planning approval that either underwent a long process of strict considerations or was bypassed illegally (Landman 2004). However, very little legislation exists towards the prevention of exclusionary spatial measures in urban public spaces in privately conducted projects. Private architectural endeavours are to comply with the building line and sidewalk requirements, but carry no accountability should the public interface of the architecture become riddled with spikes, electric fences, security cameras, or hostility toward the general public. Simultaneously, public governance neglects its responsibility toward deliberative democracy (Makakavhule and Landman 2020) when public space is robbed of its capacity to induce spatial democracy and consequently becomes disqualified as democratic space entirely. Truly public space in the City of Tshwane has practically become limited to the streets (Wallendorf 2014), which are more often than not hostile towards pedestrians.

The public interface of urban architecture contains the collection of elements that effectuate interaction between private (often interior) and public spaces (usually limited to the street). This study aims to adopt a pedestrianised approach towards the discussion of exclusionary spatial measures and devices existing in the public interface of urban architecture, and uses different scales to interpret their character. Some of the scales that become crucial to consider include scales of ownership (from private to public), intention (design intention vs. perceived intention), articulation (from subtle to austere), contribution (from contributor to catalyst), level of exclusion, and level of contestability.

The scale of ownership has already been discussed, and relates to the responsibility of installation, and therefore reversal, of exclusionary spatial measures in urban public space. A scale of intention describes what the assumed intentions of the designer or implementer were, compared to what the intentions present themselves to be in hindsight. Similar to this, a scale of deliberation analyses how deliberate the designer or implementer was with not only the installation of a particular exclusionary spatial measure or device, but with the exclusionary result it ends up having in hindsight. The scale of articulation from subtle to austere describes how obvious a particular spatial measure or device is to those who are not excluded by it, in comparison to the perception of those who are excluded by it. A scale of contribution describes an instance's performance in a broader exclusionary system. The level of exclusion of any

particular spatial measure or device is proportional to the combined size of the groups it excludes. Similarly, the level of contestability arises from contrasting perceptions of a single case, like the opposite feelings evoked in different users by the presence of surveillance cameras.

Of course, any interpretation of exclusionary spatial measures and devices in the public interface of urban architecture, towards qualitative scales like these, depends heavily on the philosophy within which one analyses the public interface itself. Through the definitions and theory discussed above, the public interface of urban architecture is divided into three categories that are theorised about either in isolation or in conjunction: the building façade, the building envelope, and landscaped thresholds.

At a city scale, the public interfaces of urban architecture adopt a common role regarding navigation through city blocks. The façades become an edge (Kesici and Erkan 2023:69) that helps urban users to "define the third dimension of urban space, in spatial memory and urban image". Familiarity of urban image develops into freedom of movement, which instils in urban users a sense of belonging (Bond 2017) and ultimately contributes to communities' social sustainability (Mrugala & Hyun 2017). In Robert Sobukwe Street, as well as at the Ditsong National Museum of Cultural History, pedestrian movement is funnelled to follow vehicle routes, disallowing freedom of choice. The exclusionary spatial measures and devices that contribute to this funnelling effect in Robert Sobukwe Street are not as impactful, since the street's canyon-like massing (**figure 12**) does this regardless. However, palisades prevent meandering in the few cases where buildings do allow for urban public place-making in their proximity. Further, uneven ground surfaces discourage pedestrian users from looking up, as tripping hazards and unhygienic puddles become the new motivation for navigational choices. The case at the Ditsong National Museum of Cultural History is contrasting, due to the nature of the museum building as a landmark and the previously permeable site that has been fenced off. Even though a user's urban image might portray the site as open, landscaped, and walkable, the exclusionary palisades, security cameras, lack of maintenance, and unhygienic conditions near transport nodes disallow pedestrians from navigating through the city block in an intuitive manner, and condemn them to vehicle routes circumventing the massive city blocks. These orthogonal routes inevitably cause pedestrians to spend far more time and energy to get from point A to point B. Exclusionary spatial measures that fence sites at their boundaries present another irony: people who travel by foot or bicycle are the victims of car-centric urban development and otherwise poor movement routes, while vehicle-owners who can usually easily afford to spend more time and energy on travel are provided with proper urban transit opportunities.

At a street scale, public interfaces are woven together to form a streetscape; an environment that has a character and that influences pedestrian behaviour (Asgarzadeh et al. 2012). The streetscape at large becomes exclusionary on physical or social levels when it is riddled with exclusionary spatial measures and devices. Exclusionary instances found to contribute to a physically exclusionary streetscape in Robert Sobukwe Street include car-centric spaces, anti-sitting and anti-lingering devices like spikes or sloped benches, disconnected interiors, unadaptable vendor stands, the lack of seating, roller shutter doors, and active security guards. These measures contribute to a streetscape where the lingering of pedestrian users is observed as a resilient and rebellious attitude in an otherwise hyper transient urban public space. Roller-shutter doors are of special interest in the discussion on social exclusion. Their individual existence does not hinder democratic behaviour, but, as discussed before, an uninterrupted series of roller-shutter doors tightly packed onto a single pedestrian street results in a polar cyclical streetscape. During work-hours roller shutter doors allow the shops to open up entirely, rendering the architecture permeable and receding the edge of the public

realm past the façade. But, when the shops close the shutters, the street becomes an urban valley with borders impermeable even to the eye. Further, a permanent attribute of exposed roller-shutter doors is that they convey a language of fear in their hardy steel materiality and exposed locks and chains – a language that, just like with the instance of surveillance cameras, help make shop-owners feel at ease, while simultaneously contributing to unease in a vulnerable nighttime dweller. Homeless people, women, children, and otherwise vulnerable individuals are the victims of an exclusionary streetscape, while to those who are less vulnerable this characteristic might go unnoticed. At the Ditsong National Museum of Cultural History, the streetscapes on all sides are practically non-functional to pedestrians. The streetscape in Minnaar Street (to the south) is impaired by the lack of maintenance in the landscaping, the car-centric nature of the informal taxi drop-off zone, the unhygienic conditions of the barred southern entrance, and, most prominently, the palisades and layered fencing on all street edges. The streetscapes to the north, east, and west of the site (Visagie, Bosman, and Schubart Street respectively) are the victims of car-centrism, sidewalks that discourage lingering, and the fenced site edges archetypical to the City of Tshwane. Users who are limited to the pedestrian use of these pedestrian-unfriendly streetscapes become hyper-mobile and the spaces become those of transience instead of belonging.

It becomes evident that the roles and responsibilities of the public interfaces of urban architecture are expanding beyond the site boundaries. The next portion of the public interface that is discussed is the building envelope. It has in parallel surpassed its initial role as functional sleeve guarding against the elements, to arrive at a more complex set of responsibilities. Zaera-Polo (2008) explores manifestations of the envelope in its ability to link the physical world with more political counterparts. One such exploration links intricacy in the shape of the building's footprint, and the resultant vertical surface area in the façade, to the number of political interactions occasioned between a private interior and the public (Zaera-Polo 2008). Robert Sobukwe Street does this very well with its gradual thresholds that extend the public realm past the building envelope, with the roller-shutter doors contributing positively to the agenda of increasing the surface area between public and private. However, certain spaces along the street neglect to grasp this opportunity when they intervene with stark, impermeable façades at the ground floor level that allow only for a single point of access and interaction. Likewise, buildings like Sunnyside Galleries that used to intentionally provide ample public-private surface area, are now fenced off and interaction opportunities limited to the length of the fence. Further, car-centric spaces like the drive-thru disregard this responsibility of the envelope entirely, since the architecture is too far removed from the public realm to allow for any pedestrian interaction whatsoever (Gehl 2010). Lastly, missed opportunities in the provision of seating in the public interface of urban architecture directly decrease the social interactions attainable within that interface. The planters at Sunnypark Mall eliminate the opportunity for the public to linger and interact within its interface through the deliberate heightening of the planter walls above seating level. Of course, such an increase in vertical surface area becomes futile when other exclusionary spatial measures and devices prohibit an equitable outcome for all users – if it results in alleys with unsafe appearances, or if universal access is not applied, it fails to fulfil a democratic responsibility.

The fences at the Ditsong National Museum of Cultural History withdraw the public pedestrian so far away from the building's envelopes, that all interaction is limited to visual observation. Along the site's periphery, surface area for interaction is reduced to a minimum by the palisades, while the vertical surface area of the museum building does so through its compact form (**figure 7**). The public space of the street is only allowed a single point of interaction through the vehicle entrance, while the pseudo-public space inside the gated area is only allowed a single point of interaction with the architecture – through the entrance ramp. The vehicle entrance remains exclusionary in its car-centrism and the museum's ramp entrance

remains exclusionary through its exhaustive dimensions, its sloped “landings”, and its negation of user dignity through the bird droppings on handrails and seating areas. Contrastingly, deliberate avoidance of interaction within the heritage buildings on site exists in interest of their preservation, yet successful democratic interactions take place in their vicinity nonetheless – in the spaces where there is an observable absence of any exclusionary spatial measures and devices. Ultimately, exclusionary spatial measures and devices in urban public space result in the deliberate minimising of social interactions between public and private (or ‘insider vs outsider’), which leads to the stagnation of political outcomes occasioned by a particular urban public space (Zaera-Polo 2008). Users who need democratic space to obtain a voice suffer from this lack of provision (Makakavhule & Landman 2020).

Public interfaces of urban architecture in the City of Tshwane have the progressively complicated role of accommodating diversifying users while performing against an “increasingly abrasive” climate (Zaera-Polo 2008:200). The envelope becomes a vessel for public participation in many ways, while demarcating space both horizontally (in the floor plan) and vertically (in the section) (Zaera-Polo 2008). Robert Sobukwe Street shows a contestable condition of vertical articulation in the building envelopes, where a consistent sidewalk overhang contributes immensely to an inhabitable sidewalk, while exclusionary spatial measures and devices in the vertical dimension disallow for any connection between users on ground floor and those on upper levels (Gehl 2010). Spikes on overhangs, fences between balconies, and burglar bars on window openings disconnect the upper storeys physically and socially just as the fences and turnstiles do so at ground floor level. Inversely, the pseudo-public interface[12] of the museum building blatantly attempts to bridge the vertical gap, through the entrance ramp, but fails to provide equitable dignity to those who are dependent on it[13]. Further, classist exclusion exists where the ramp ends abruptly at a pay-station that prohibits financially restricted users from accessing the programme. Programmatic exclusion at large is, of course, a rich topic for debate in a future study, but is not further discussed in this paper, as it is not primarily a spatial intervention. Both case studies of this paper present architecture where exclusivity is engendered through verticality – Robert Sobukwe Street through explicit exclusionary spatial measures and devices in the vertical dimension, and the Ditsong National Museum of Cultural History through a façade that is predominantly impermeable physically, financially, and visually. In a sense, the envelope is used as a vertical barrier rather than a catalyst for public participation, thereby negating its democratic responsibility towards a diverse user.

The façade remains as the final element in the public interface discussed in this paper. The architectural façade has been theorised about in many ways, attributing to it characteristics of faciality, visual intrigue, spatial division, public art, mediation, heritage, and even inhabitation.

One of the most prominent characteristics of the façade is its faciality (Zaera-Polo 2008); that composes it as a representational device to convey a personality (Jürgenhake 2014). A few obvious physical elements contribute to this semiology, like the notion of buildings having a front and a back, and the façade as the element through which interaction takes place, much like faces in living things. Historically, different architectural movements contain diverse connotations to the observation of the façade, like the ideology of imperialism denoted from Classicism, capitalism connotated with Art Deco, humanism in the Modern Movement, and even the contrasting connotation of either intrusive colonialism or patriotic cultural heritage in Cape-Dutch architecture. Hand-in-hand with this goes the more recent tendency of rapidly developed architecture to become faceless in a capitalist world.

[12] The interface between an urban place and a pseudo-public context.
[13] A handrail covered in bird-droppings becomes humiliating for a dependant user.

The vibrantly diverse Modern Movement architecture of Robert Sobukwe Street does not struggle with facelessness. Rather, apart from the abovementioned exclusionary spatial measures and devices observed in the vertical dimension of the primary façades, inclusionary considerations seem to be limited to the building's 'face'. Service alleys, or any secondary façades, are more heavily afflicted with exclusionary spatial measures and devices than what the 'face' of the building tends to be. Such spaces are dark or have unsafe appearances resulting from haphazardly placed fences. Admittedly, buildings need services zones and full holistic inclusivity would be an unrealistic task, especially when considering the high-density building typology in Robert Sobukwe Street, where service zones require access from the main street. However, these service zones are not adequately demarcated in a manner that discloses them as such, and not all secondary façades are allocated to services. For example, Sunnypark Mall funnels all pedestrian activity into its main façade (the entrance), through deliberately designed anti-lingering benches along the exhaustive stretch of its secondary façades (east and south). These secondary façades are not allocated to services, and exclusionary measures along their span diminish the publicness of their adjacent sidewalks. The Ditsong National Museum of Cultural History, on the other hand, makes visible all its façades, albeit behind the habitually exclusionary site boundary fences. The museum allocates to the northern, western, and southern façades subordinate value, while maintaining the eastern façade as its face. The face of the building composes its heritage value – a point that can become contestable when the arched entrance (**figure 34**) is observed either as a functional element towards benefitting the interior (**figure 33**), a reference to other historical museums in the site's vicinity (**figure 35**), or a visual reference to the iconic Voortrekker ox wagon (**figure 36**). The psychological connotation of the building's face is not discussed in this paper, but deserves further investigation. Exclusionary spatial measures and devices in the face, as well as subordinate façades, of this building are reduced to a minimum. However, the intentional positioning of the minimal seats to face the eastern façade limits the truly free use of benches to dedicated viewing of the building's face as an object. The façade is spatially, visually, and programmatically disconnected from the viewer.

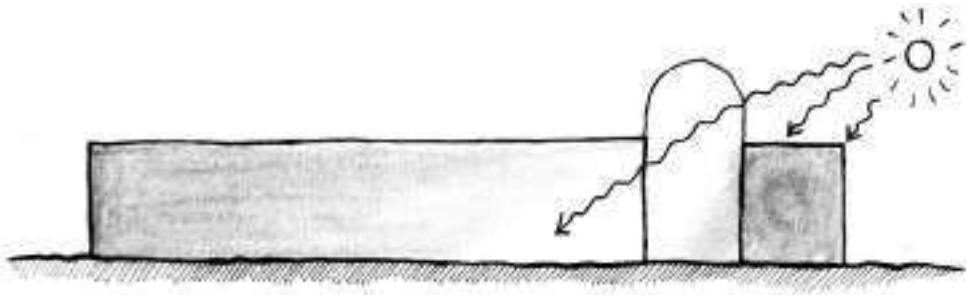


Figure 33: Translucent arched entrance designed for interior lighting benefit

Figure 34: Arched entrance of the museum building

Figure 35: Arched frame installation at the Natural History Museum, Tshwane (SA History n.d.)

Figure 36: Iconic Voortrekker ox wagon (McCallum 2016)

Here, the façade characteristics begin to align with how Birgit Jürgenhake (2014) describes the façade as public art, and how Michael Dennis (CNU 2013) describes the façade both as a surface onto which architectural elements are pasted, and as a sum of its parts. Although many philosophies, like that of Zaera-Polo, discourage the consideration of the façade purely as a surface, it does nonetheless take on that quality especially when comprising flat vertical geometry. Together with this, authors like Bond (2017) and Florio, et al. (2023) place great responsibility onto the architectural façade to be visually intriguing, with the level of complexity of the façade dictating users' desire to linger in its vicinity. While the architecture of Robert Sobukwe Street is far more visually intriguing than that at the Ditsong National Museum of Cultural History, exclusionary spatial measures and devices prevent lingering within the proximity of visually intriguing urban places, while also contributing to a higher level of visual complexity. Spikes, security cameras, lack of maintenance, and outgrown tree rings all contribute to a negative feeling of visual clutter. Two contestable elements also contribute to visual clutter: roller-shutter doors, and a sea of advertisements and signage. These elements cannot be ruled out as negative, as they are not inherently exclusionary (apart from what was previously discussed), and could in fact be argued to contribute to the visual intrigue and therefore to the general character of the street, based on the interpreter's philosophy of aesthetics (Nasar 1994). However, regardless of the high level of visual intrigue present in Robert Sobukwe Street, exclusionary spatial measures and devices like the lack of seating (or obviously uncomfortable seats), the lack of free movement routes (as discussed previously), fenced-in gathering spaces, and the presence of surveillance cameras deter potential admirers from lingering in its urban public space. The Ditsong National Museum of Cultural History, that was evidently designed to be an object observable as a piece of art, ironically lacks visual intrigue entirely. Exclusionary spatial measures and devices that perpetuate its failure to invite pedestrians to linger in its vicinity include the unfriendly sidewalks, the multi-laned streets around the site, its car-centric entrance gate with active security, its impenetrable boundary fence, exhaustive ramps, and most importantly its blunt, impenetrable façade. These exclusionary spatial measures impede the well-designed outdoor spaces on the site, like the amphitheatre discussed below, that are fluid enough to accommodate spatial democracy but are hidden in pseudo-publicness instead.

The two case studies display architectural trends from various zeitgeists, with Robert Sobukwe Street showcasing a majority of Transvaal Modern Movement buildings, and the Ditsong National Museum of Cultural History portraying a palimpsest of various eras, including architecture from Pretoria's first prison site, architecture built in a style identifiable from the Baker School's craft influence, and the museum building as a monumental Postmodern artefact. Across these eras and styles, the façade element contributed to architecture in different ways. The older prison architecture manifested the façade as a fortress wall, while the typical *stoep*[14] seen in the Baker School residences nudge its definition to what Dennis (CNU 2013) calls "inhabitable façades" – façades that possess a depth dimension along with width and height. Neither the Modern Movement architecture in Robert Sobukwe Street, nor the Postmodernist museum building exhibit inhabitability in their façades. Modern Movement principles attribute to the façade the primary role of serving the interior, while the museum building appears to serve the role of separating the interior. Contrastingly, each of the Baker School heritage buildings at the Ditsong National Museum of Cultural History is equipped with a *stoep* but inhabitability is prohibited through access control effected by the fence, gate, and active surveillance. Homeless or otherwise shelterless people suffer from the uninhabitability of public interfaces of urban architecture – an anti-homeless agenda that is further blatantly perpetuated by anti-resting spatial measures and devices, like the spikes, angled seats and

[14] A covered porch, often street-facing and historically unfenced.

lack of seating in Robert Sobukwe Street, and the anti-sleeping benches and overall access control at the Ditsong National Museum of Cultural History. Admittedly, the landscaped amphitheatre positioned at the centre of the city block that houses the Ditsong National Museum of Cultural History, serves as an example of outstanding inclusionary spatial design in urban public space (had it not been robbed of its public status by haphazard boundary fences). It contains a balance of soft and hard surfaces, opening a range of resting opportunities for different needs, while being universally accessible and prompting social interaction through its concave shape and small pedestal that promotes performance art. Unfortunately, even this excellent artefact is compromised by a tall surveillance camera pole right behind the performance space.

Between the investigation in Robert Sobukwe Street and that at the Ditsong National Museum of Cultural History, not a single space proves to reach democratic potential by the definitions Makakavhule and Landman (2020) outline. The studies prove the City of Tshwane's tendency to limit public space to the street, which inherently favours the car over the pedestrian. This exclusion of the pedestrian does not hinder the pace of urban progress (Gehl 2010), but rather the character of it, and does so to the detriment of a vast majority of the population, to maintain an often exaggerated or false feeling of safety within a handful of privileged individuals. The continuous spatial exclusion of particular groups or individuals, especially when such exclusion goes unnoticed by those who do not suffer from it, not only prevents successful social integration, but counterworks such efforts.

The exclusionary spatial measures and devices found in the public interfaces of the urban areas under investigation in this study contribute to an increase in what Trancik coins "lost space" (Trancik 1986: s.p.). While fences aim to erase the grey area existing between private and public by demarcating a legal boundary, they end up minimising a place's public interface to the length of the fence. This reduction of the interface is an ignorant response, as it, more often than not, increases the size and severity of the involved lost spaces. An example exists at the Sunnyside Galleries, where the public square to the south of the building and the recessed outdoor areas serving the taverns to the west used to be unfenced urban public space regardless of its private ownership and consequent existence within the defined grey area of responsibilities. The fences have since demarcated the extent of public and private ownership, and the result is a drastic increase of lost space: the square is now of a pseudo-public nature, where informal trading in the publicness of the street is physically distanced from the formal trading happening within the private ground floor of the building, and within this distance the square is left unused. To the west, the fencing near the tavern doesn't allow a thoroughfare for more vulnerable individuals, and, together with its awkward distancing from the building, contributes to an increase in lost, unoccupiable space within the building's public interface. Similarly, what used to be publicly governed space at the Ditsong National Museum of Cultural History is now treated as privately owned property, and the quality of maintenance inside and outside of the fenced area is in a horrid disproportion. Litter build-up gets concentrated in the new lost spaces created by unconsidered indents in the fence; and the callous lack of accountability seems to go hand-in-hand with the stark spatial definition of ownership.

The grey area between private and public ownership is a pivotal part of the public interface of urban architecture, carrying vast interactive potential. It is undergoing a trend of being minimised, with the accompanying loss of accountability. This unaccountability breeds exclusionary spatial measures and devices that demarcate, segregate and control the extent to which particular users can use these grey areas. The result is a parade of urban spaces with their sites demarcated by ownership so meticulously, and their boundaries designed so carelessly, that lost spaces are drastically increased not only in quantity, but also in their

severity of exclusion. This leaves no possibility of the natural resolution of these spaces. It is becoming increasingly necessary for a legislative framework that enforces accountability for these grey areas that exist across public-private boundaries.

The world of Disability Studies benefitted greatly from the shift from the individual model to the social model, and this was effectuated through education and legislation. Similarly, the designing of inclusionary spaces hinges on an understanding of what exclusionary or inclusionary spatial measures and devices entail, and which social groups are impaired by them in what manners. Such a legal framework should extend the accountability of any urban architectural project to be inclusionary to the extent of its public interface, and not merely to the edges of its site boundaries. This extension of accountability will cause the grey areas between private and public to flourish in inclusivity from both the private and public sectors, and consequently counterwork the exclusionary spatial measures and devices found in these current lost spaces. Further, such legal framework should be able to clear out any ill-intended exclusionary spatial measures and devices through making designers aware of the social impact their exclusionary spatial decisions have, and through education on symbolic exclusion as outlined by Landman (2004).

Semiotics play a major role in the study of social exclusion, as the same spatial measures that make some feel safe, or otherwise positive, rob others of their freedom. The “impact of fear” is usually more far-reaching than crime itself (Landman 2017), as these measures begin to perpetuate spatial segregation, nudging our city to what they once were in the days of Apartheid. Modern-day segregation involves the fearful privileged separating themselves from the financially disadvantaged through a level of freedom that is only attainable through wealth; like relaxing at a coffee shop, spending a day at the mall, financially supporting gated communities, etc. Democracy is compromised when any sense of belonging in an urban environment requires the owning of private property, ultimately ostracising the financially disadvantaged (Rosenberger 2019). Ironically, what sets the City of Tshwane apart from other landownership issues worldwide is that, as proved in this study, urban spaces are riddled with exclusionary spatial measures and devices in urban spaces of private and public ownership alike.

Therefore, the public interface of urban architecture is urged to have an acute regard for diversifying urban users (Zaera-Polo 2008), regardless of landownership. The trend of private developments disregarding the public, and public developments mimicking the private is in desperate need of abolition through legal intervention, as a deliberate effort towards democratic space (Makakavhule & Landman 2020). Democratic space effectuates spatial democracy and, in turn, spatial democracy creates sustainable communities (Mrugala & Hyun 2017); ones that provide to the future urban environment in the City of Tshwane a more reliable course to social inclusion and integration.

6. Conclusion

In the City of Tshwane, and in South Africa at large, past realities of segregation are actively avoided, and reflection and integration strategies attempt rectification. Zoning and legislation support integration on a spatial level, while museums and memorials support reflection on a cultural level. However, history is repeating itself in the combined effect of smaller exclusionary interventions. This study emphasises the link between landownership and the exclusionary spatial measures and devices in the public interface of urban places through the outlined theoretical framework. The grey area between private and public ownership has become the seedbed for exclusionary spatial measures and devices in urban public space, where ownership boundaries are fenced at their borders. Unfenced areas become the only truly public space, most of which is also lost space. This degradation of public space is the

degradation of democratic space, which impedes on spatial democracy to the pedestrian's detriment.

The public interfaces of urban places contribute to this degradation at three scales. At an urban scale pedestrians suffer from the forced navigation routes along fenced city blocks. They are deprived of freedom of movement that is equitable to that that of vehicle users. Further, large areas or long distances where pedestrians are prohibited from lingering further prohibits them from experiencing a sense of belonging in these spaces. This study discuses a range of measures that exclude people from lingering in a space, ranging from explicit exclusion to visual dullness. The public interface has a further impact on the publicness and democratic potential of urban space in its degree of inhabitability and the gradation of its thresholds. Uninhabitability, impermeability, and other exclusionary measures turn urban public space into inherently transient space and lead to a hastened pedestrian.

At the scale of the envelope a public interface that is infested with exclusionary spatial measures and devices disallows adequate interactions between private and public users. This happens especially when the grey area between public and private is reduced to its absolute minimum and the surface area for insider-outsider contact is consequently minimised. This degrades the notion of publicness through growing feelings of 'othering' in privileged individuals and victimising those who depend on healthy public space to obtain a voice.

Lastly, at the scale of the façade, the public interface of urban places carelessly increases the proportion of lost space when their facades become shut to the public. Space that could have had democratic potential is cleaved with blunt walls or palisades and the public end is left unactivated through the absence of seating and shade. Facades further contribute to the pedestrian's discouragement to linger in the public interface of urban places when they are uninhabitable and disallow or deny lingering, as discussed above.

Ultimately, exclusionary spatial measures and devices in the public interfaces of urban architecture in the City of Tshwane is understood as small-scale spatial interventions that counterwork integration strategies and degrade the publicness of large-scale urban space. These measures act together to delegitimise democratic space and their severity can be understood through analysis of ownership rights and responsibilities. Private interventions that leak into the public realm catalyse public interfaces that are exclusionary and that perpetuate a divided city. Public interventions that exclude any user are fundamentally problematic and should be emphasised as the first signs of a repeating history of spatial inequality. Apart from sidewalk conditions and building line considerations, existing legislation neglects the topic of exclusionary spatial measures and devices in urban public space, especially in private development. This condemns all remaining space as lost space, with little to no governance and often no inhabitation whatsoever. The interaction between urban public interfaces in the City of Tshwane and the pedestrian is discussed at the three scales at which they contribute to the large-scale exclusion in urban spaces.

This study finds that the assessment of exclusionary spatial measures in urban public spaces in the City of Tshwane on different scales of interpretation is a task for future research. The discussion in this paper successfully analyses exclusionary spatial measures and devices on scales of ownership (private to public), contribution (contributor to catalyst), level of exclusion, and contestability, but scales of intention, deliberation, and articulation reveal unexpected complexities. The intention of an exclusionary spatial measure or device can sometimes be assumed, but accuracy in the answering of this question relies on surveys and interviews. Further, even if the true intention of the designer can be found through rigorous research methods, these intentions can remain unknown to an excluded user. A designer might intend to design for stormwater runoff, while a member of the public seeking rest might observe this

as hostile. Research that finds a way to define and analyse the spatial decision-maker's intentions, together with a comparison to the observer's perceptions thereof will answer this research question. Similarly, a scale of articulation seems a difficult task, as exclusionary spatial measures and devices may not present themselves as blatantly to mobile, able, or otherwise privileged individuals as they do to the vulnerable or needy. Further, the articulation of an exclusionary spatial measure or device may not always be in accordance with a spatial decision-maker's intentions. This study finds that many of these issues of articulation are the result of negligence, but a future study should investigate the perception of the subtlety and blatancy of particular exclusionary spatial measures and devices to different users, in comparison with intent.

Finally, this paper successfully defines exclusionary spatial measures and devices, and highlights the array of social groups affected by these measures and devices in the City of Tshwane. Although these social groups are interpreted in more detail, the paper concludes that the pedestrian user is always disadvantaged by exclusionary systems that deteriorate democratic space.

Other opportunities for future research provoked by this study include the analysis of programmatic exclusion in urban environments. This is particularly alluring at the Ditsong National Museum of Cultural History, and other museums in the City of Tshwane, where the curation remains strongly aligned with outdated methods that reinforce an insider-outsider mentality with its colonialist tendencies. These outdated curation strategies, together with the pay station at the museum's entrance, render the programme applicable to only particular users. A future study can endeavour into the effect this has on cultural preservation and the success museums achieve in broadcasting public knowledge. Further, more obvious, opportunities arise in the extension of this study to wider areas in the City of Tshwane, and to studies that include nighttime data collection.

The most crucial outcome that this paper urges for is the formulation of legislation that extends ownership responsibilities deeper into the public interface and far into the grey area that exists between private and public. Such legislation should define the public interface as the nucleus for public interactions and should outline a range of responsibilities that urban architectural projects have towards the publicness of their interfaces. Private developments should have responsibilities to avoid the creation of lost space, to create lingering spaces in their sidewalks, and to minimise exclusionary spatial measures and devices to a degree outlined by legislation. Public developments should abolish exclusionary spatial measures and devices entirely, with the exception of some typologies in unique cases. Ultimately, such legislation should delegate governance of the public interfaces of urban architecture under a dual responsibility of the owner and the public, in a manner that attempts to curb the tendency of carelessness seen in the grey areas between private and public space.

These grey areas are charged with the potential to become nodes of interest, points of gathering, or otherwise democratic space, but they have become lost through the careless and exclusionary nature of both private and public developments. The legal limitation of exclusion in these areas promises the healing of spatial democracy in the City of Tshwane, to the benefit of the pedestrian and the public at large.

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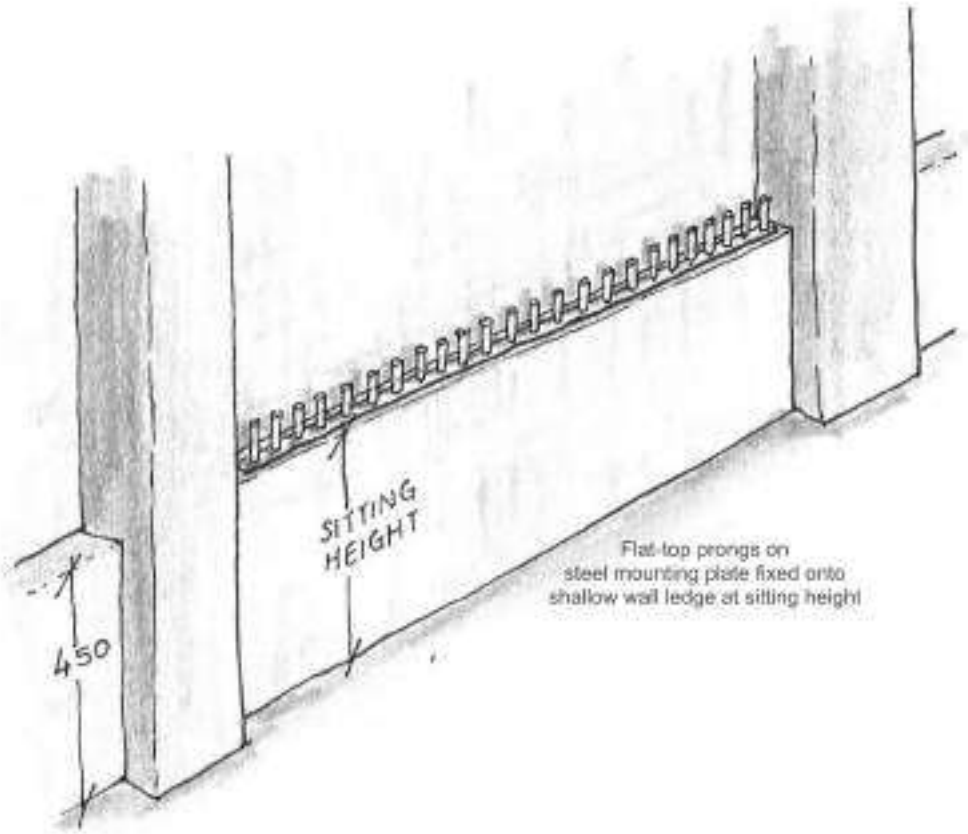
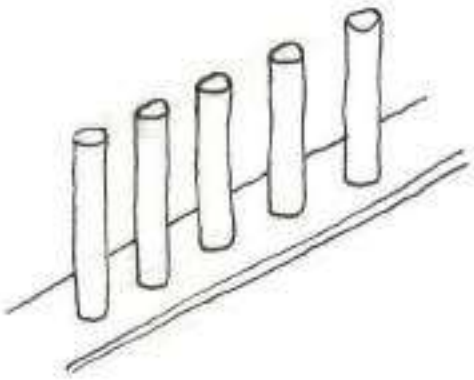
8. Appendices

Appendix A: Visual lexicon of exclusionary spatial measures and devices in Robert Sobukwe Street, Sunnyside.

Appendix B: Maps of exclusionary spatial measures and devices in Robert Sobukwe Street, Sunnyside.

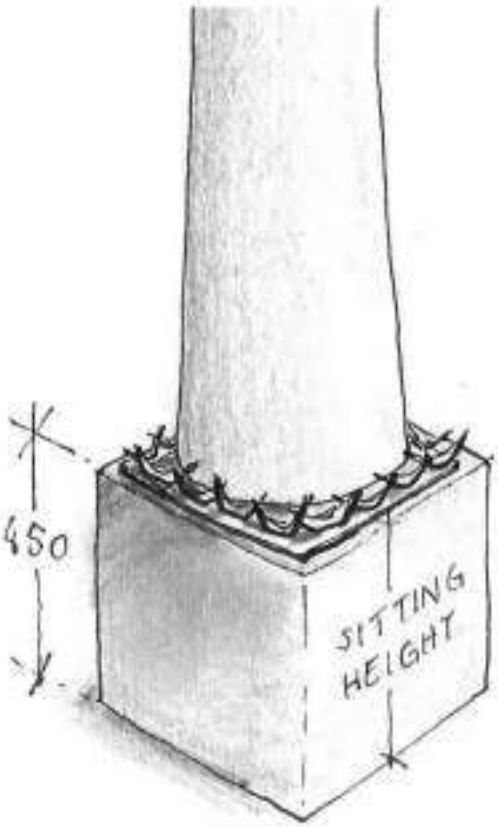


Flat-top prongs on
steel mounting plate fixed onto
shallow wall ledge at sitting height

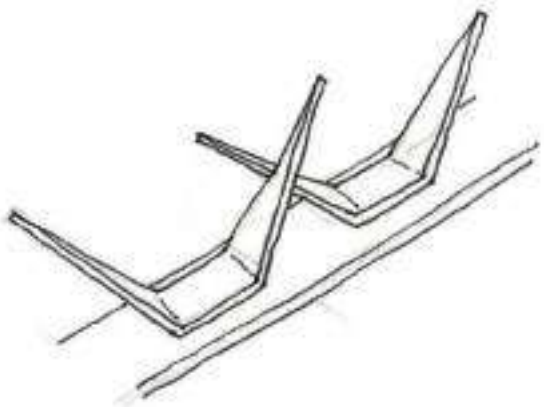


Flat-top prongs on steel mounting plate detail

H1.1 - Flat-top prongs



Fork spikes on steel
mounting plate fixed to
column base at sitting height



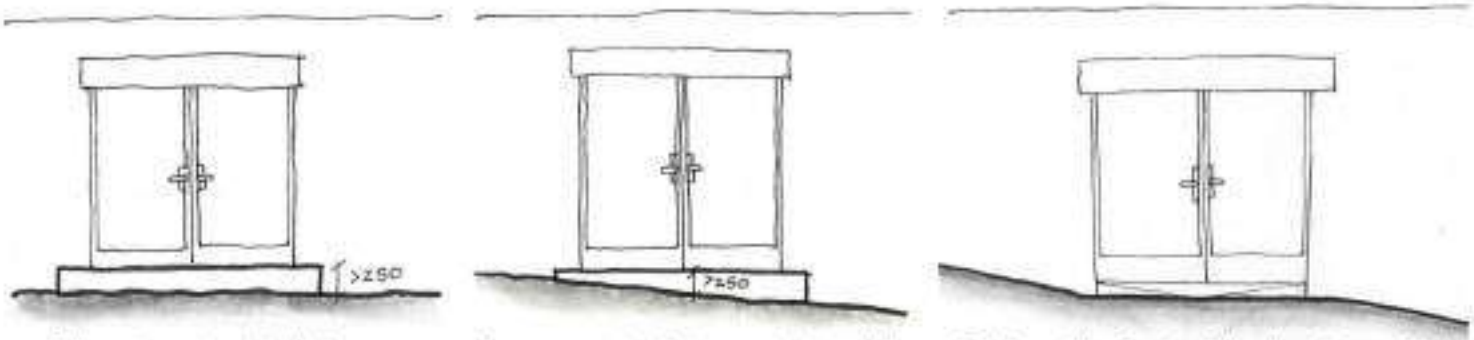
Fork spikes on steel mounting plate detail

H1.2
Fork spikes

INSTANCE H1: ANTI-SITTING DEVICES
CATEGORY: HOSTILE DESIGN

A VISUAL LEXICON OF EXCLUSIONARY SPATIAL MEASURES AND DEVICES
IN URBAN PUBLIC SPACE OF THE CITY OF TSHWANE, SOUTH AFRICA

CASE: ROBERT SOBUKWE
STREET, SUNNYSIDE

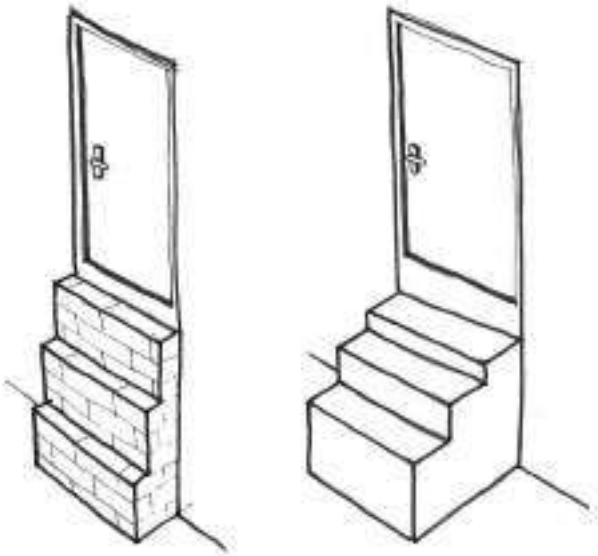


Entire entrance step is too high

Average or centre of entrance step is too high

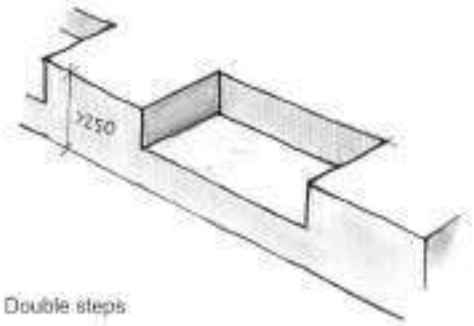
Solution: outdoor floor levelled and small ramp added

H2.1 - HIGH ENTRANCE STEPS



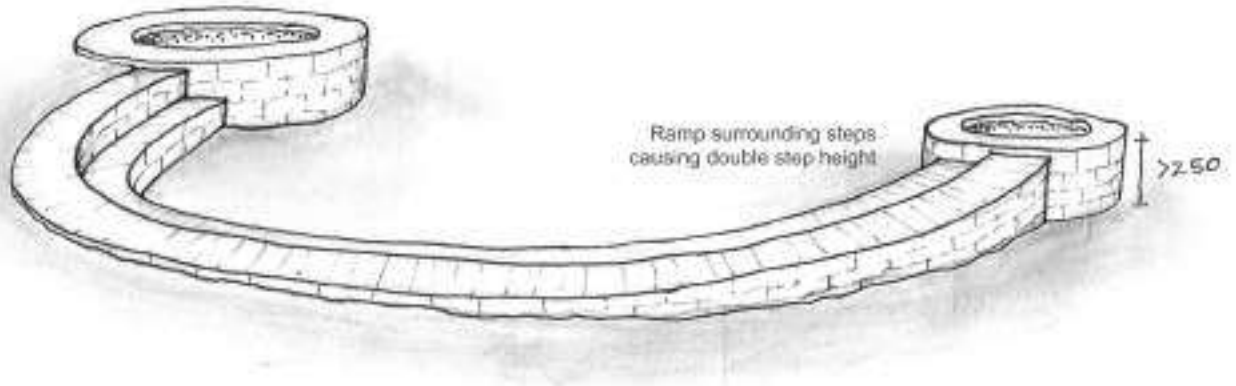
Stairs entirely substandard

Unequal stair dimensions



Double steps

H2.2 - SUBSTANDARD STAIRS

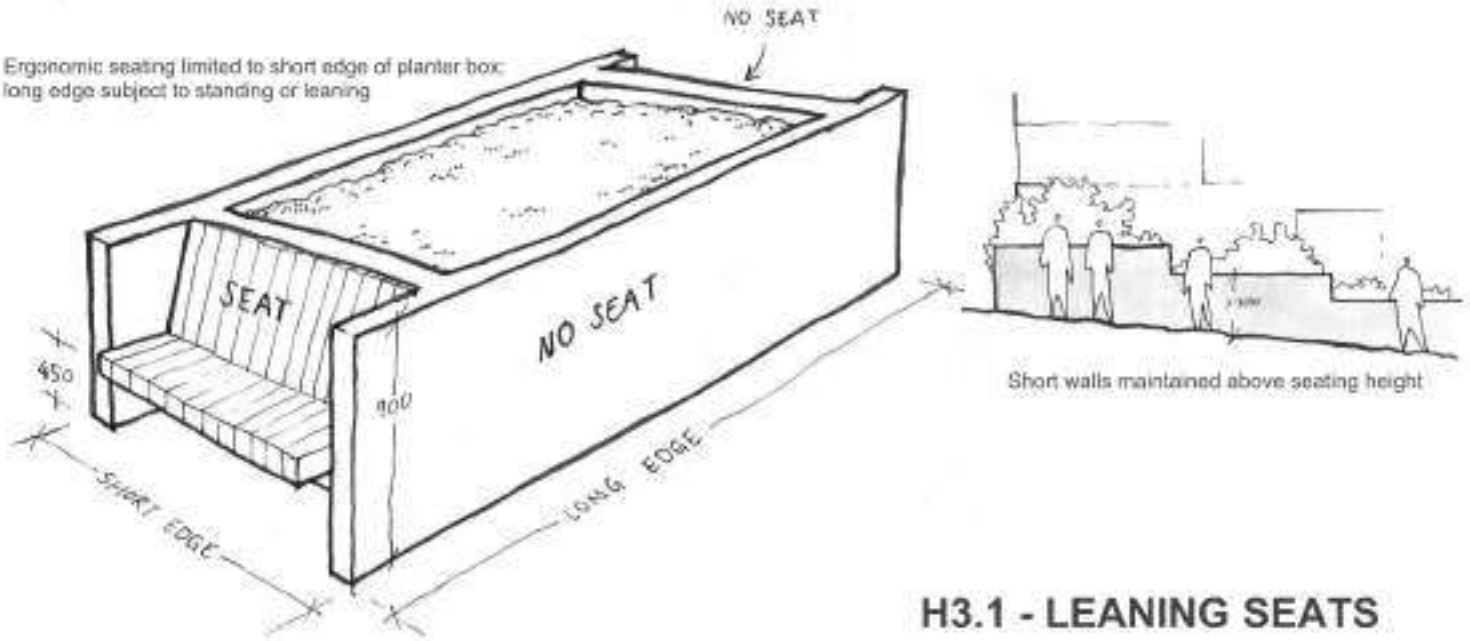


H2.3 - UNEVEN ACCESSIBILITY

INSTANCE H2: SUBSTANDARD STEPS
CATEGORY: HOSTILE DESIGN

A VISUAL LEXICON OF EXCLUSIONARY SPATIAL MEASURES AND DEVICES IN URBAN PUBLIC SPACE OF THE CITY OF TSHWANE, SOUTH AFRICA

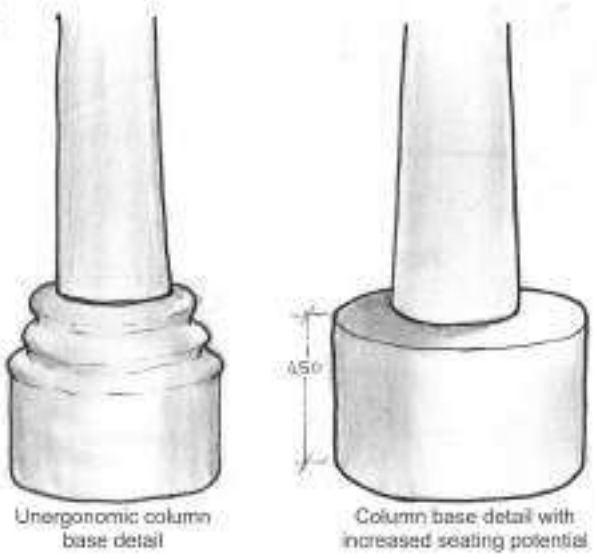
CASE: ROBERT SOBUKWE STREET, SUNNYSIDE

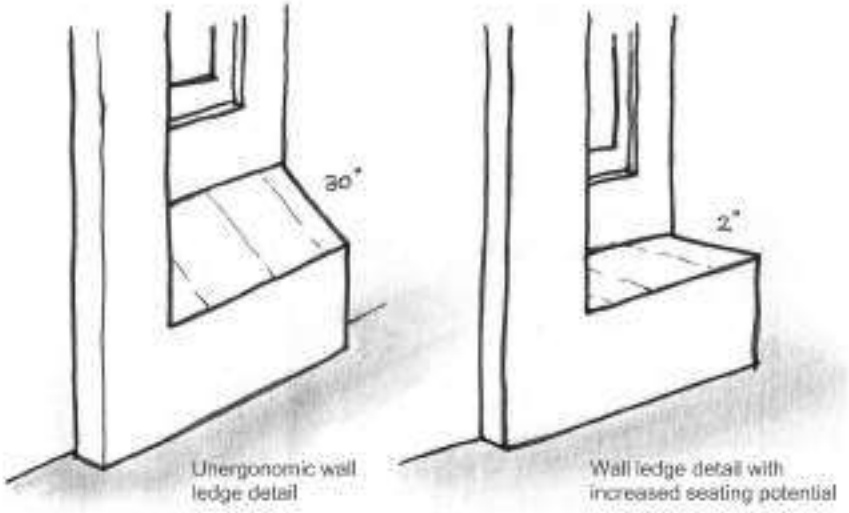


H3.1 - LEANING SEATS

INSTANCE H3: UNERGONOMIC SEAT HEIGHTS
CATEGORY: HOSTILE DESIGN

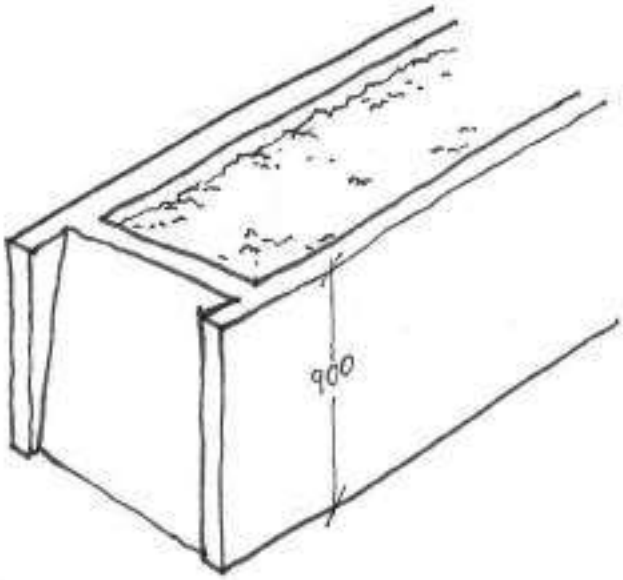
H4.1 - CURVED COLUMN BASE





H4.2 - SLANTED WALL LEDGE

INSTANCE H4: UNERGONOMIC SLOPES
CATEGORY: HOSTILE DESIGN

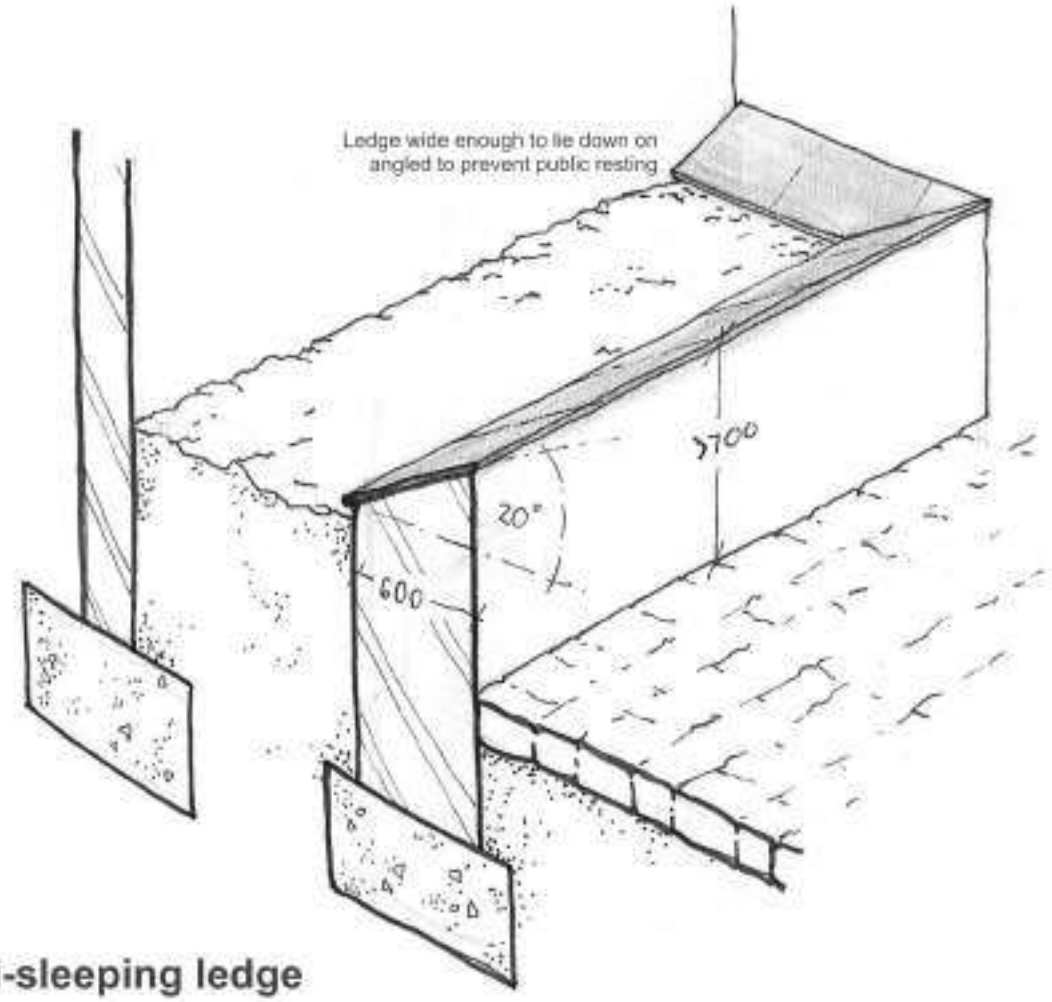


Short walls angled to discourage leaning and loitering

H4.3 - Anti-leaning wall

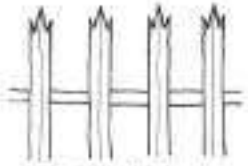
Bus top equipped with round pole to discourage loitering

H4.4 - Anti-waiting bus stop

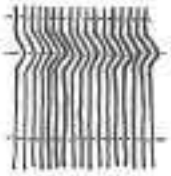


H4.5 - Anti-sleeping ledge

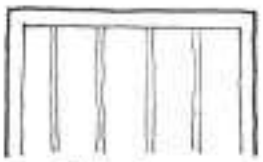
INSTANCE H4: UNERGONOMIC SLOPES
CATEGORY: HOSTILE DESIGN



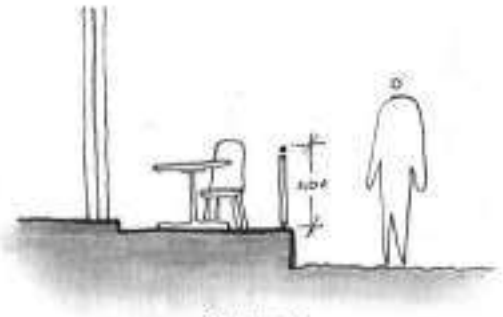
Traditional Palisade



Clearview Fence

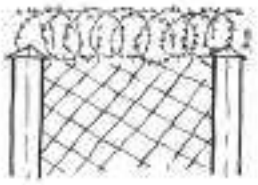


Flat-top fence



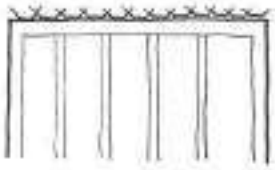
Balustrades

H5.1 - FENCE AND PALISADE TYPOLOGIES



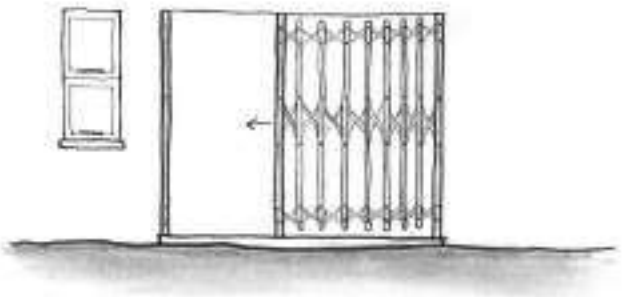
Multi-fencing

Anti-climbing prongs



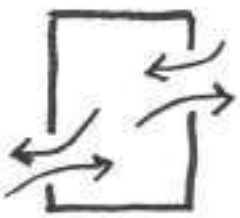
Flat-top with spikes addition

Flat-bar hinged gate

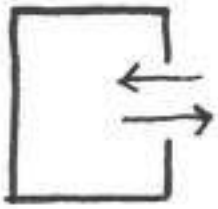


Trellidor

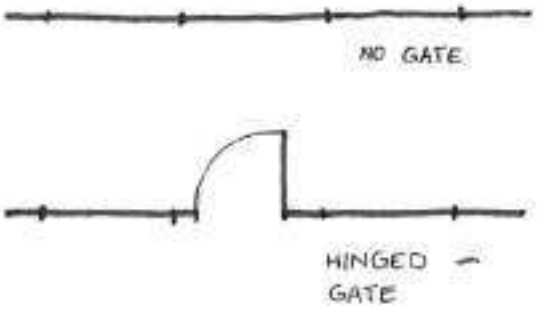
H5.2 - GATE TYPOLOGIES



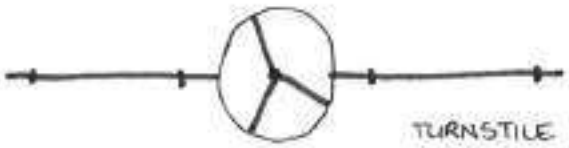
THOROUGH-FARE



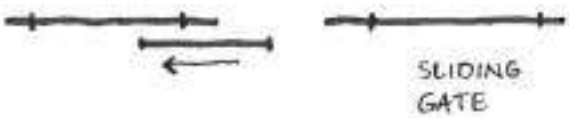
ONE-WAY



H5.3 - FENCE PERMEABILITY

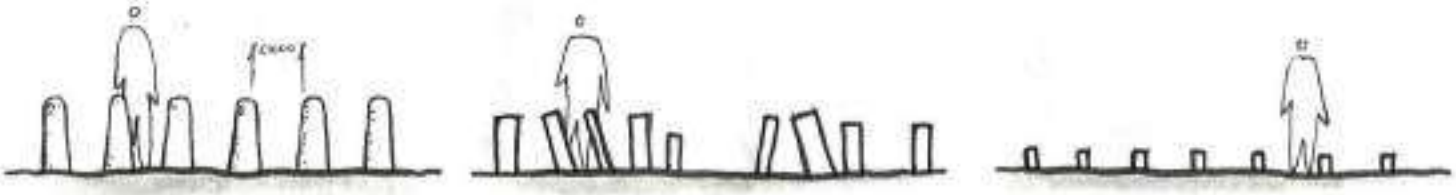


TURNSTILE



SLIDING GATE

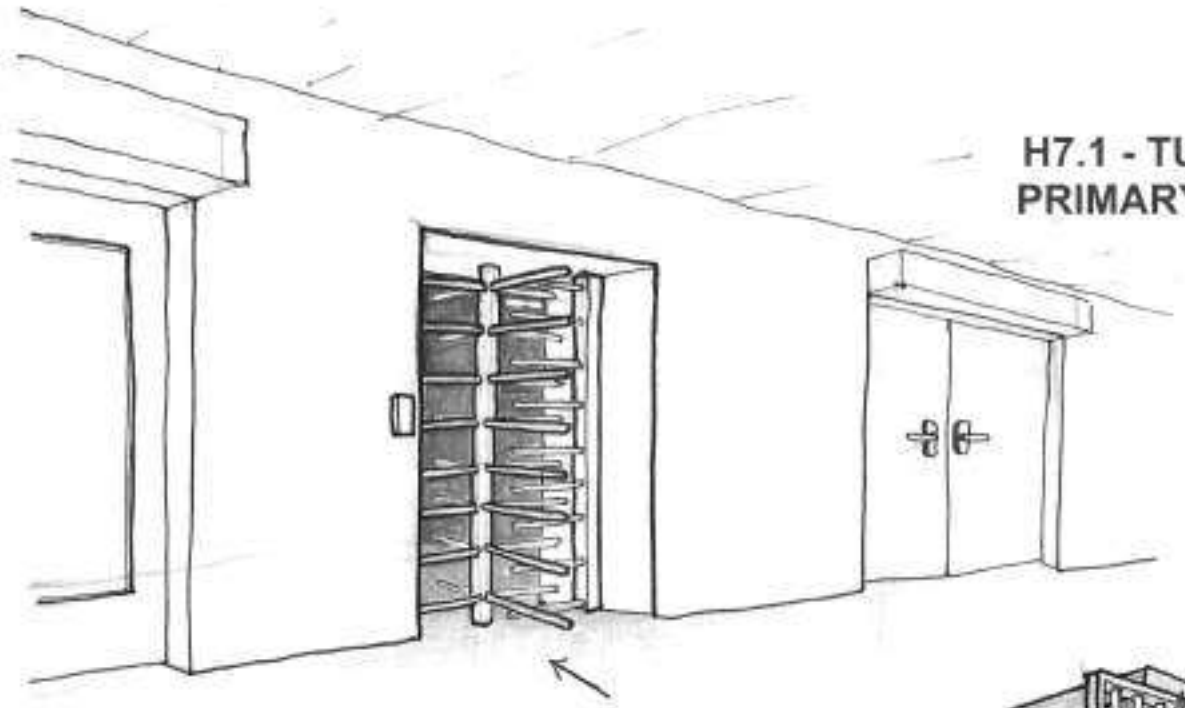
INSTANCE H5: FENCES
CATEGORY: HOSTILE DESIGN



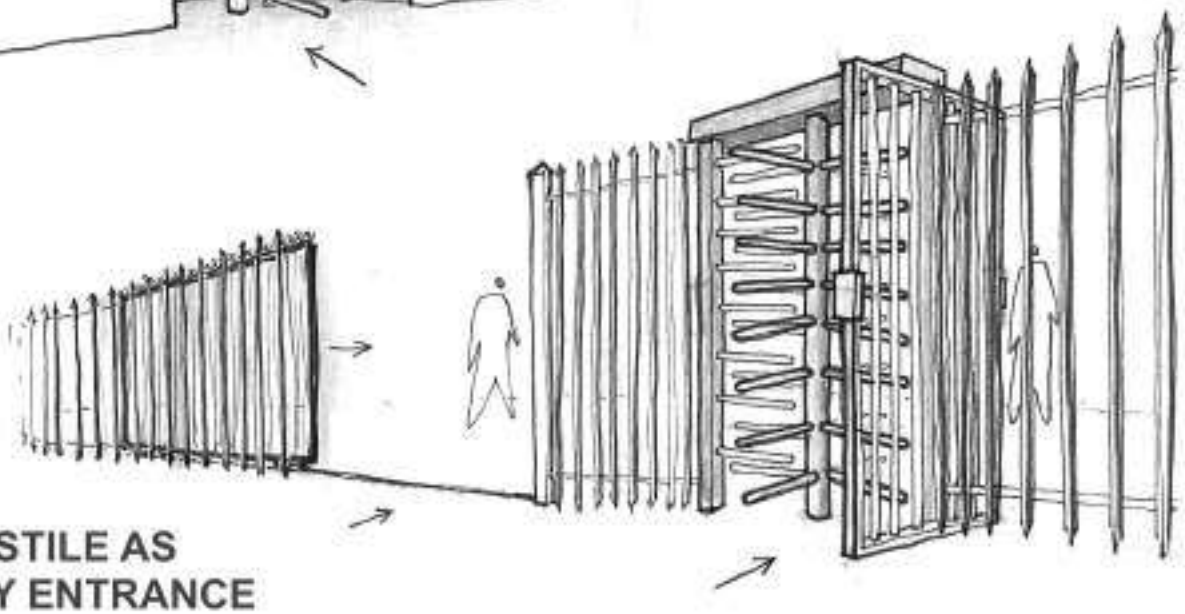
Wheelchair inaccessible spacing | Irregular instances | Low visibility

H6.1 - BOLLARD TYPOLOGIES

INSTANCE H6: BOLLARDS
CATEGORY: HOSTILE DESIGN

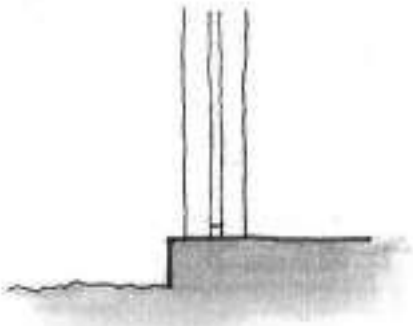


H7.1 - TURNSTILE AS PRIMARY ENTRANCE

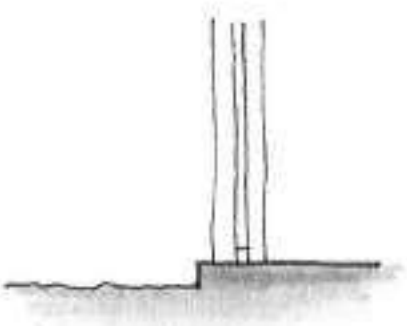


H7.2 - TURNSTILE AS SECONDARY ENTRANCE

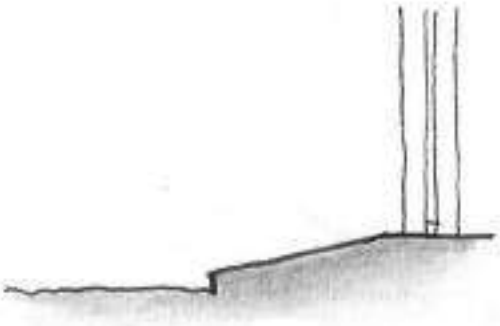
INSTANCE H7: TURNSTILES
CATEGORY: HOSTILE DESIGN



Full step at entrance



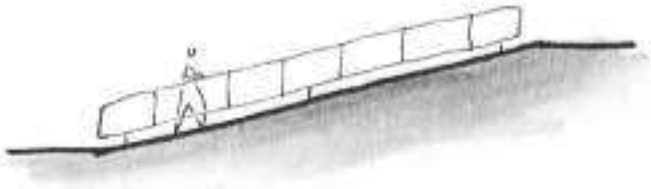
Reduced step at entrance



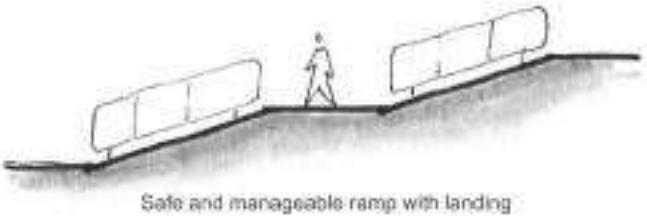
Ledge at entrance ramp

H8.1 - WEATHER STEPS

INSTANCE H8: INACCESSIBLE THRESHOLDS CATEGORY: HOSTILE DESIGN

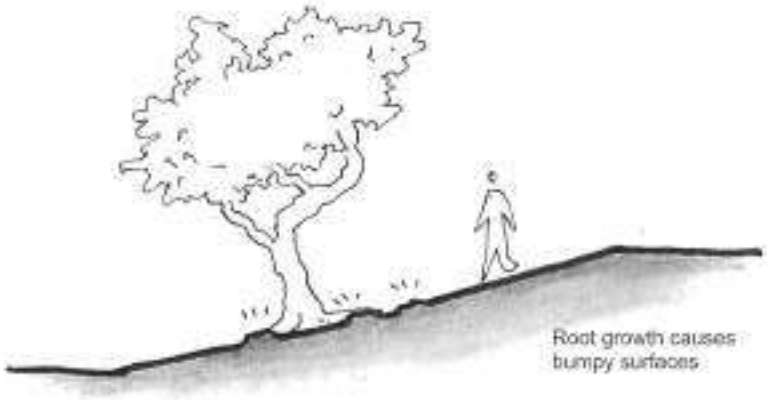


Exhausting ramp with no landing



Safe and manageable ramp with landing

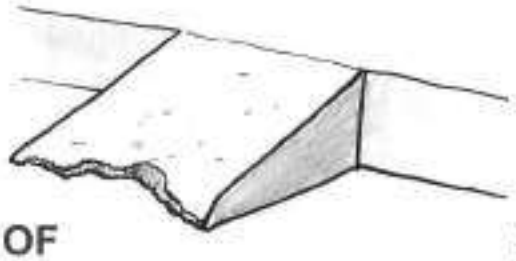
H9.1 - ABSENCE OF LANDINGS



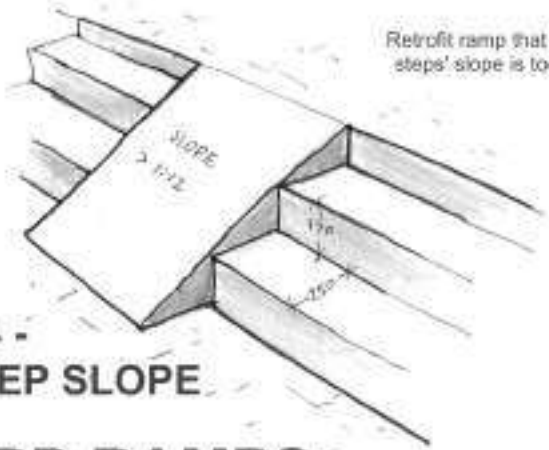
Root growth causes bumpy surfaces

H9.2 - OBSTRUCTIONS ON RAMP

Damage to ramp renders it unusable



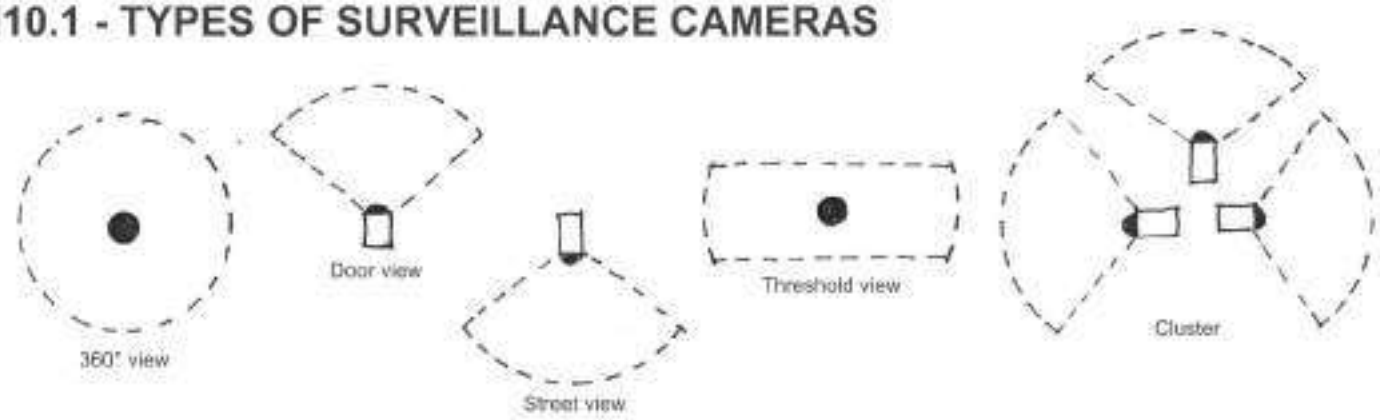
H9.3 - LACK OF MAINTAINANCE



H9.4 - STEEP SLOPE

INSTANCE H9: SUBSTANDARD RAMPS CATEGORY: HOSTILE DESIGN

H10.1 - TYPES OF SURVEILLANCE CAMERAS

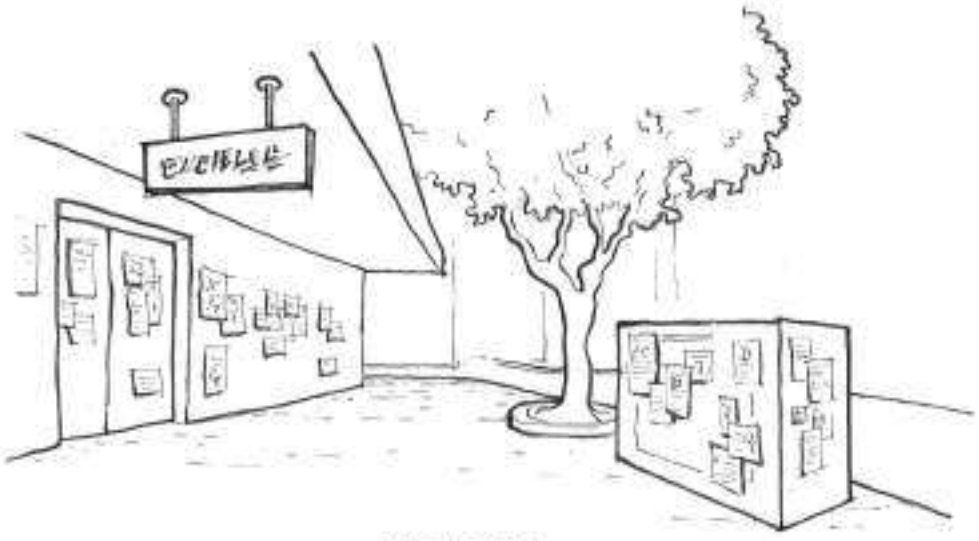


H10.2 - VIEWING TYPOLOGIES

INSTANCE H10: SURVEILLANCE CAMERAS CATEGORY: HOSTILE DESIGN

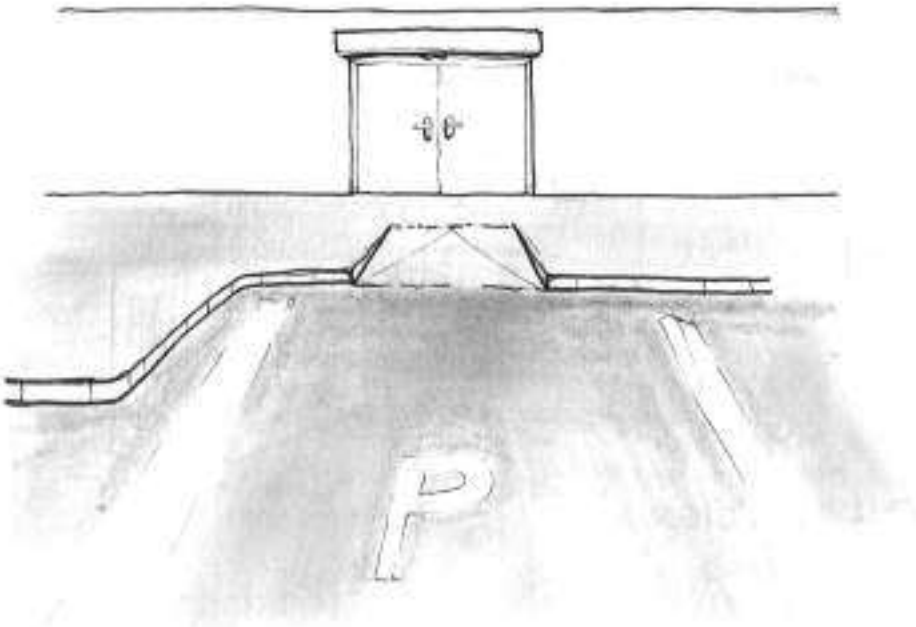
Access control

Visual clutter

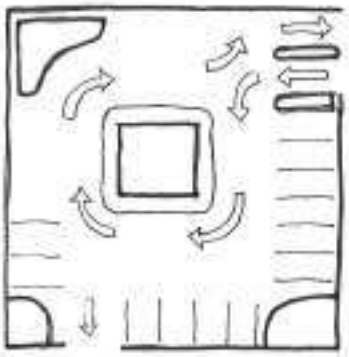


"Spend to enter"

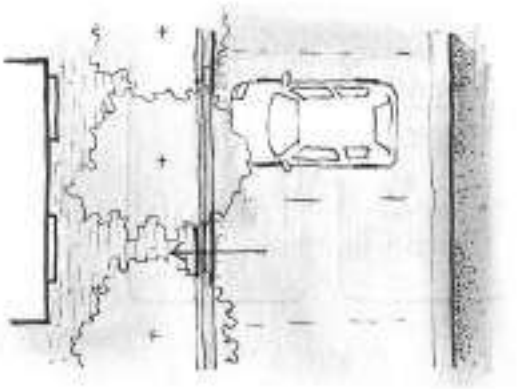
INSTANCE H11: INTRUSIVE SIGNAGE CATEGORY: HOSTILE DESIGN



H12.1 - ACCESS RAMP SHARED WITH PARKING SPACE

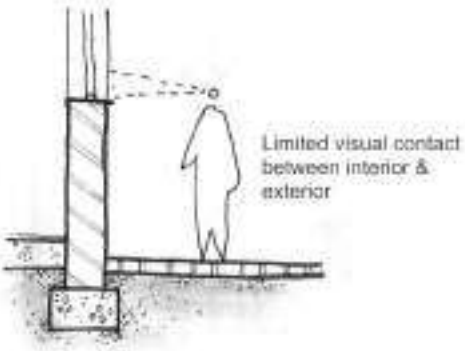


H12.2 - SPACES WITHOUT PEDESTRIAN ACCESS

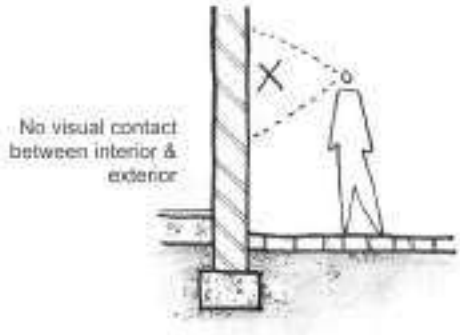


H12.3 - NO SPACES WITHOUT VEHICLE ACCESS

INSTANCE H12: CAR-CENTRIC SPACES
CATEGORY: HOSTILE DESIGN

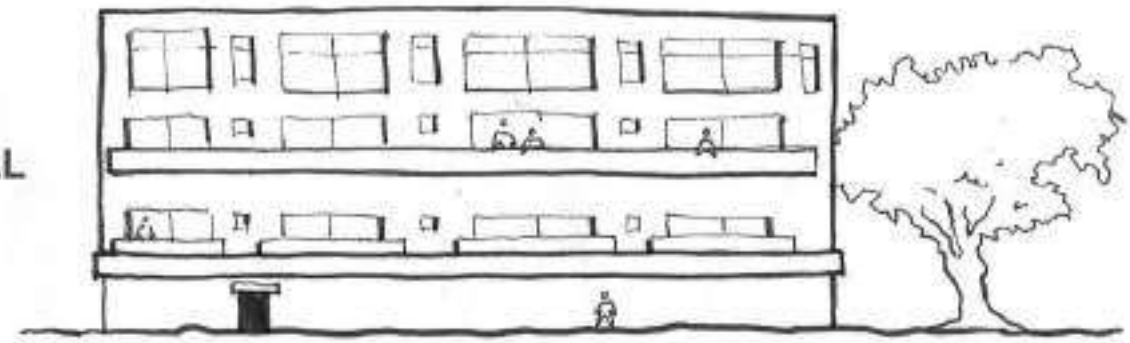


H13.1 - VISUAL DISCONNECT

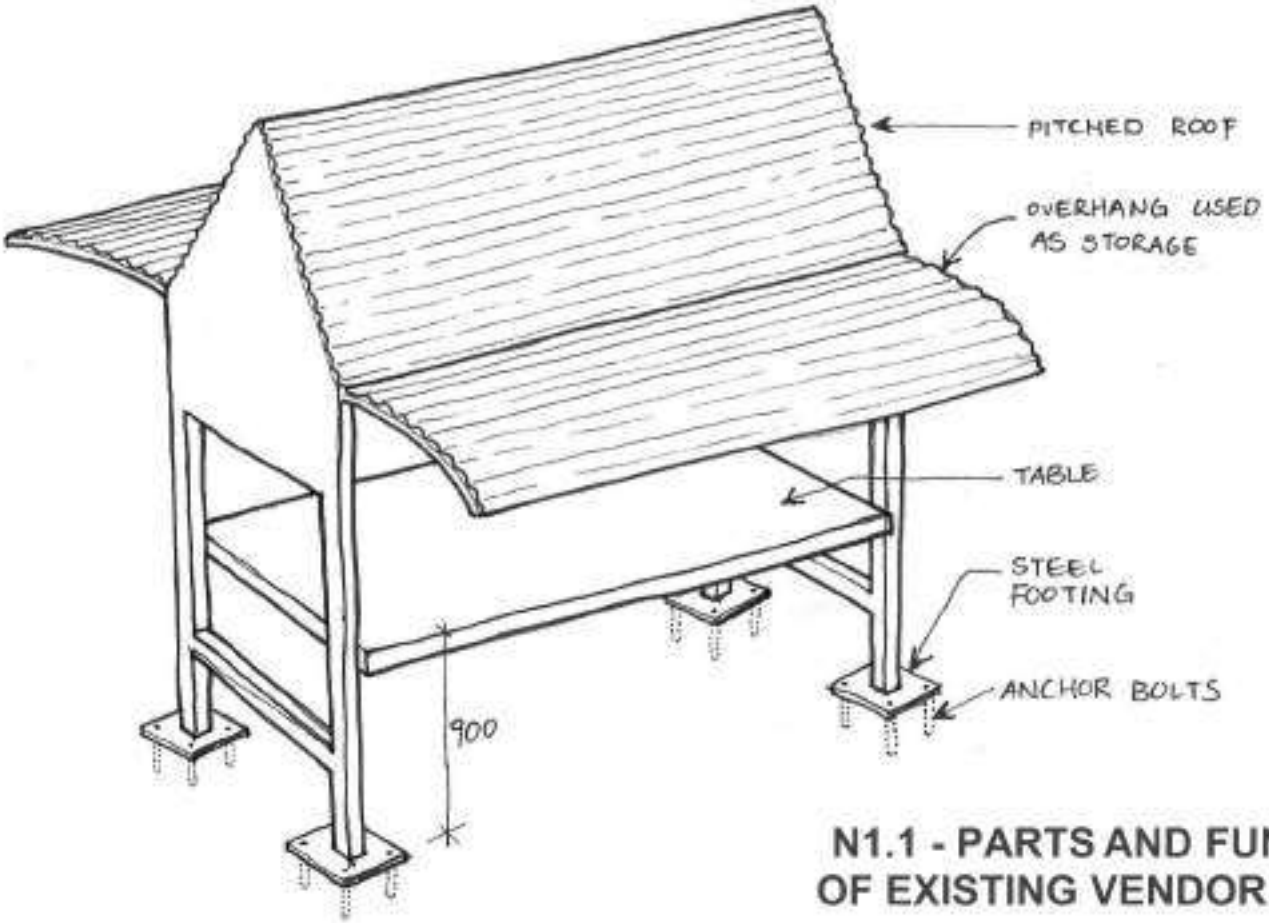


H13.2 - PHYSICAL DISCONNECT

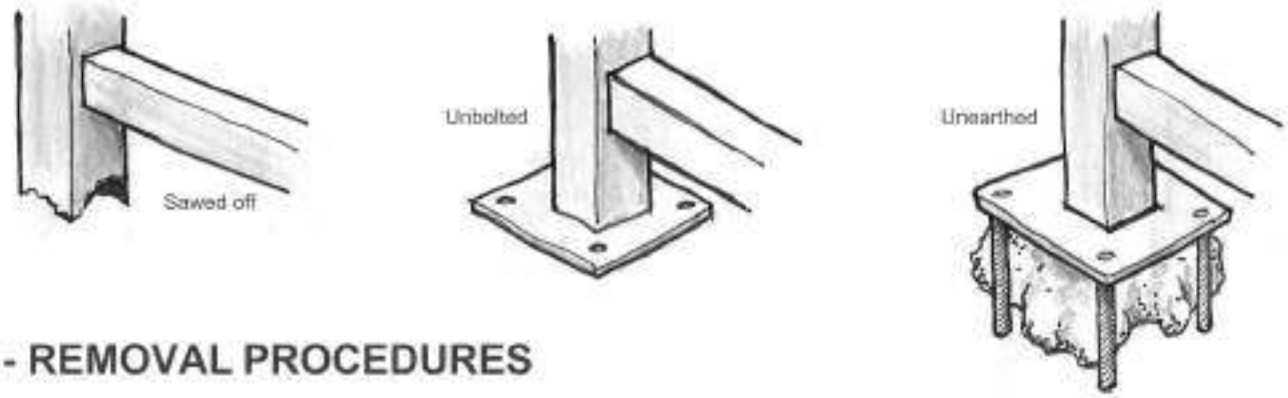
Limited access points along expansive ground floor edges



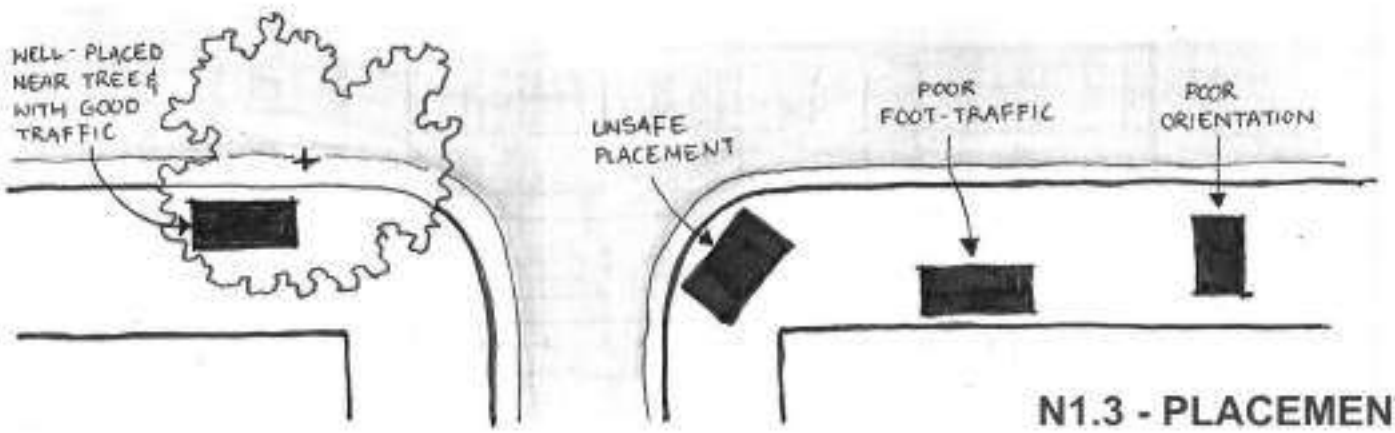
INSTANCE H13: DISCONNECTING FACADES
CATEGORY: HOSTILE DESIGN



N1.1 - PARTS AND FUNCTIONS OF EXISTING VENDOR STANDS

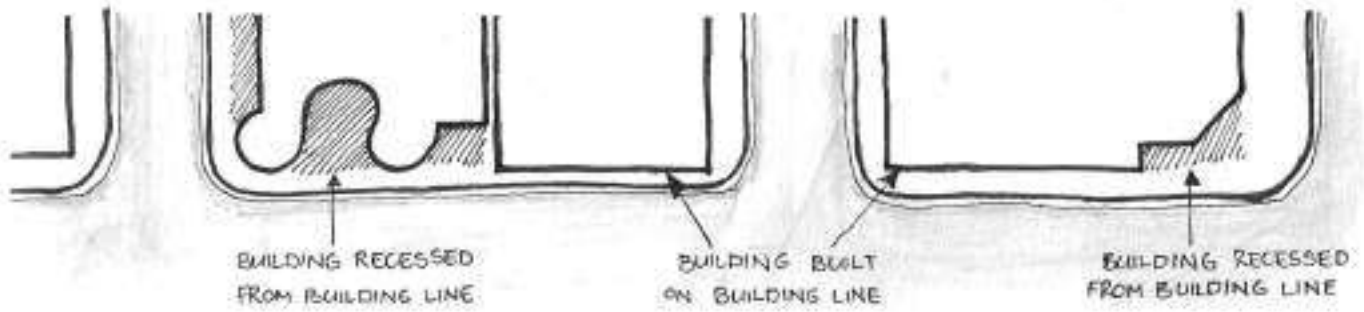


N1.2 - REMOVAL PROCEDURES

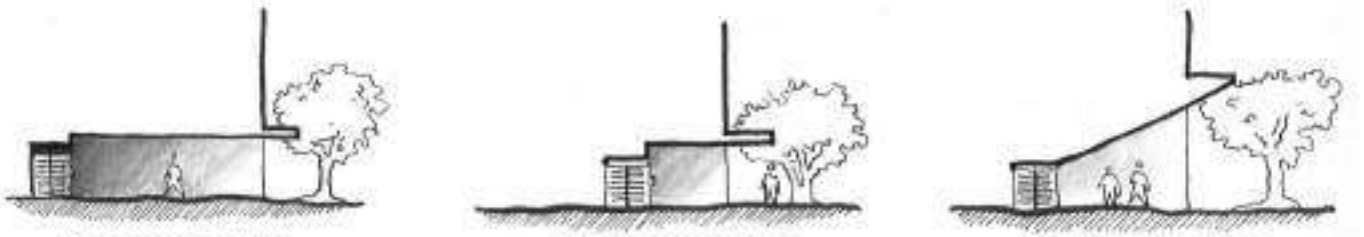


N1.3 - PLACEMENT

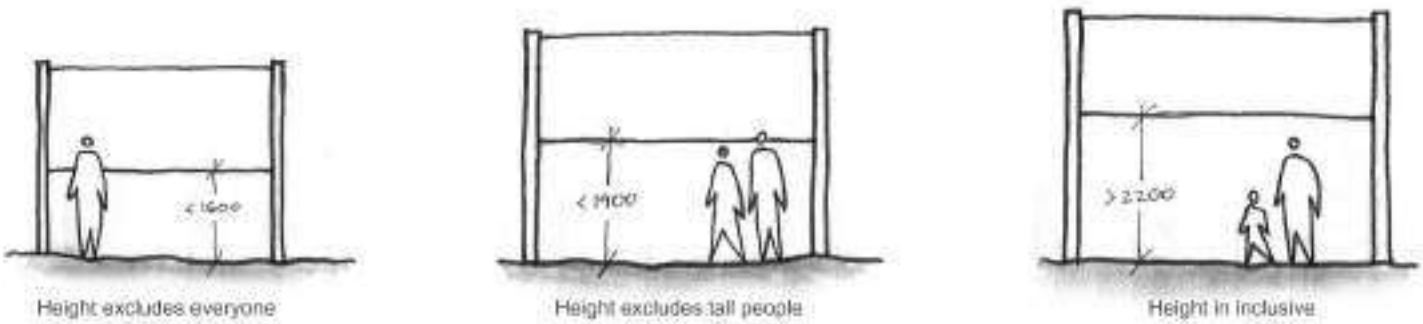
INSTANCE N1: UNADAPTABLE VENDOR STANDS
CATEGORY: NEGLIGENT DESIGN



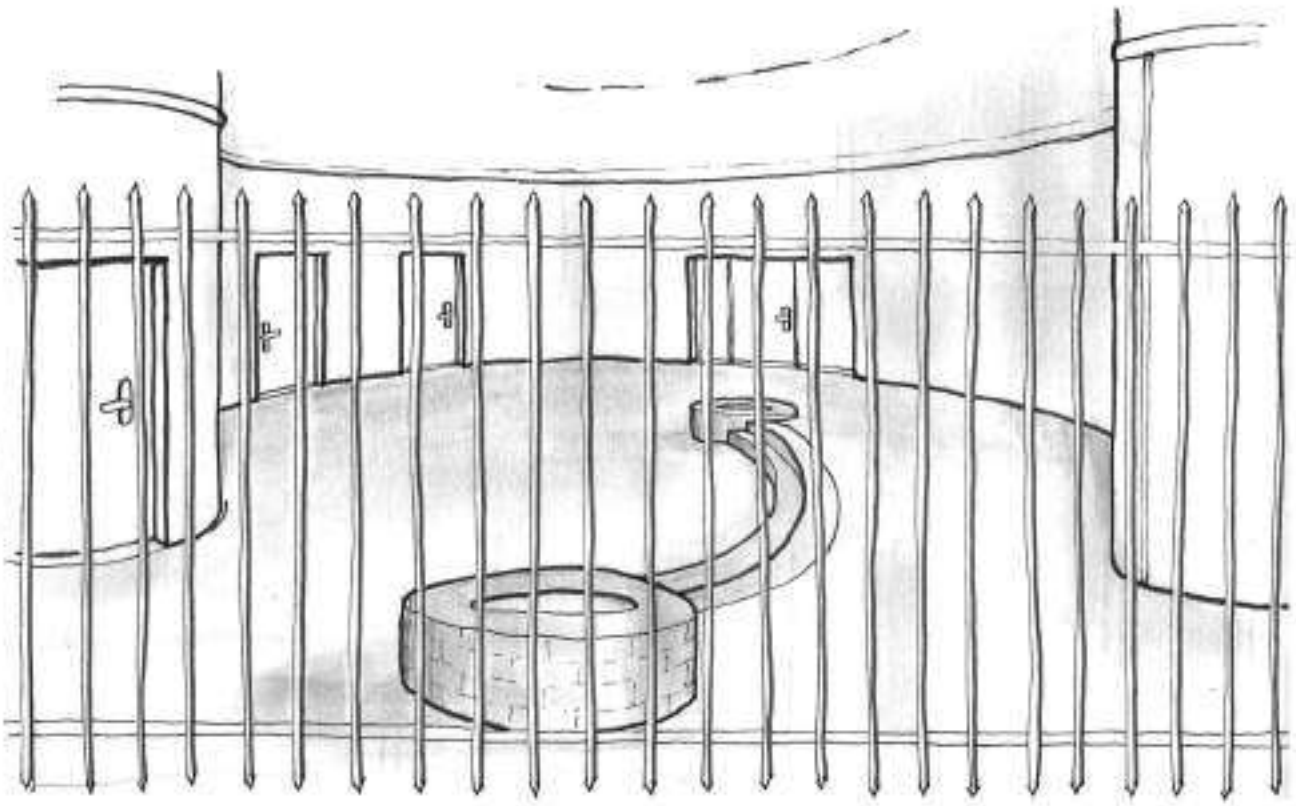
INSTANCE N2: NO URBAN PUBLIC SPACE CREATED
CATEGORY: NEGLIGENT DESIGN



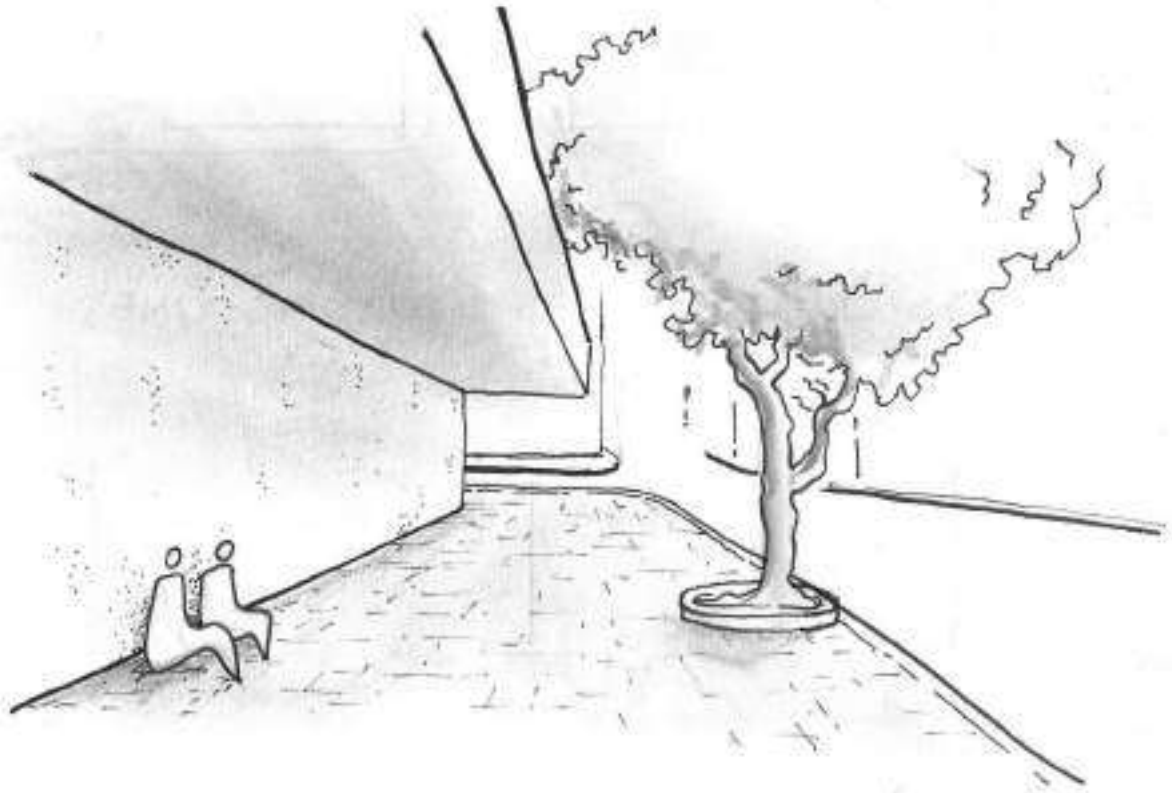
INSTANCE N3: UNSAFE ENTRANCES
CATEGORY: NEGLIGENT DESIGN



INSTANCE N4: EXCLUSION OF TALL PEOPLE
CATEGORY: NEGLIGENT DESIGN

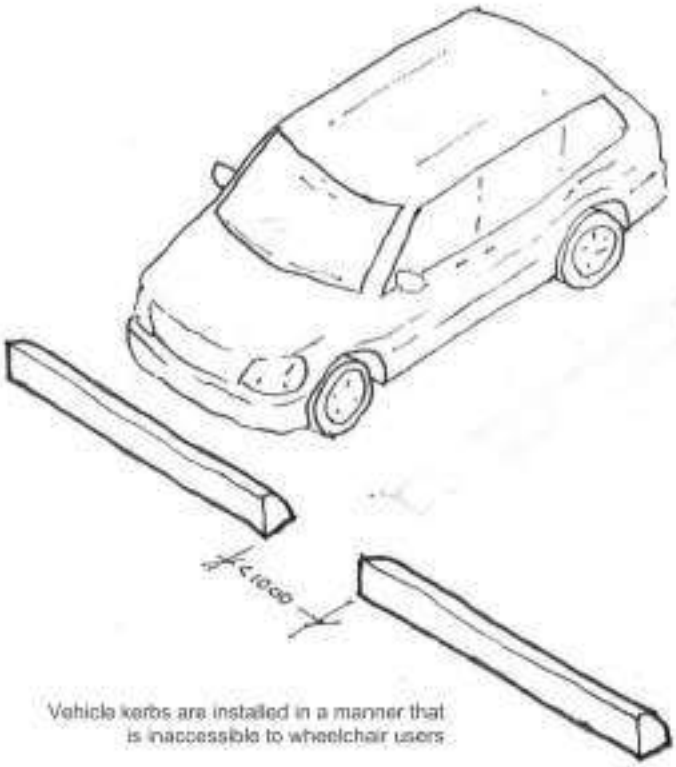


N5.1 - FUNCTIONING SEATING FENCED OFF FOR PRIVATE USE ONLY



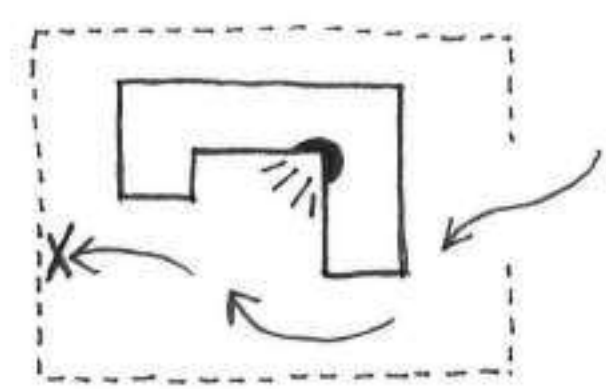
N5.2 - NO SEATING PROVIDED ON BARREN INTERFACES

INSTANCE N5: LACK OF SEATING
CATEGORY: NEGLIGENT DESIGN

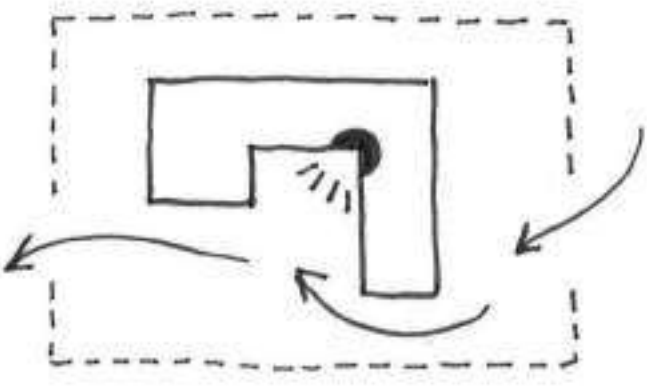


Vehicle kerbs are installed in a manner that is inaccessible to wheelchair users

INSTANCE N6: WHEELCHAIR BARRIERS
CATEGORY: NEGLIGENT DESIGN



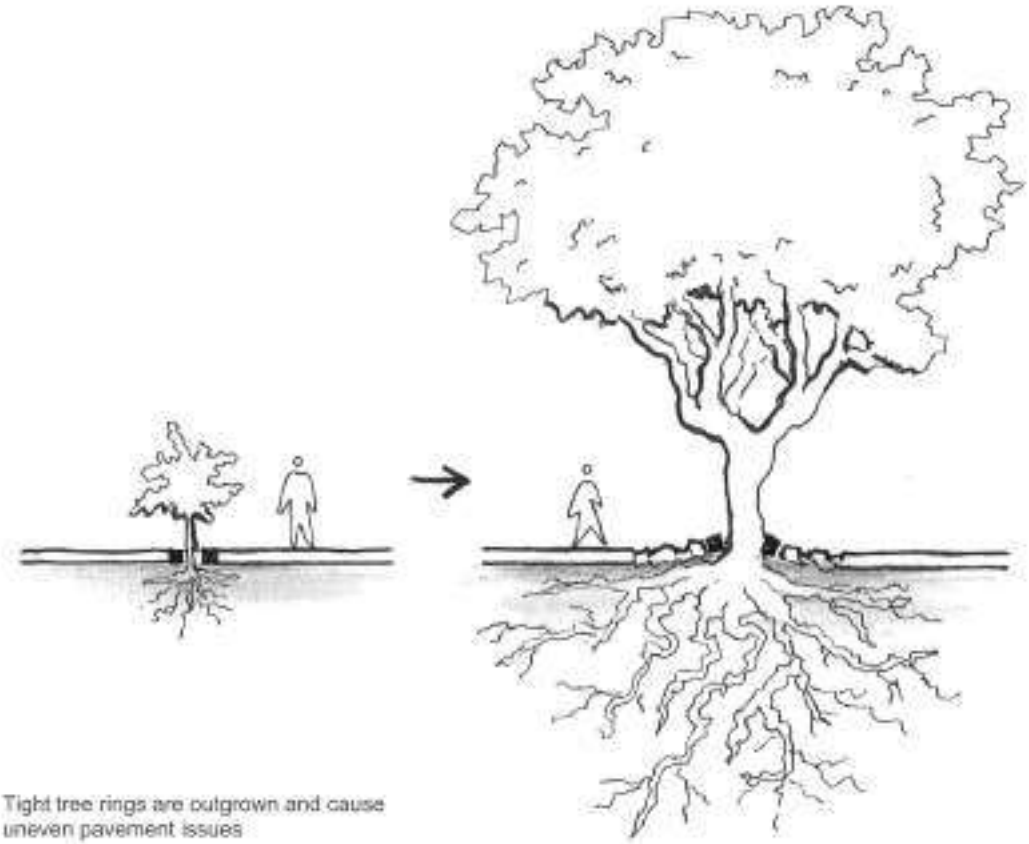
No thoroughfare is provided; unsafe spaces cannot be fleed



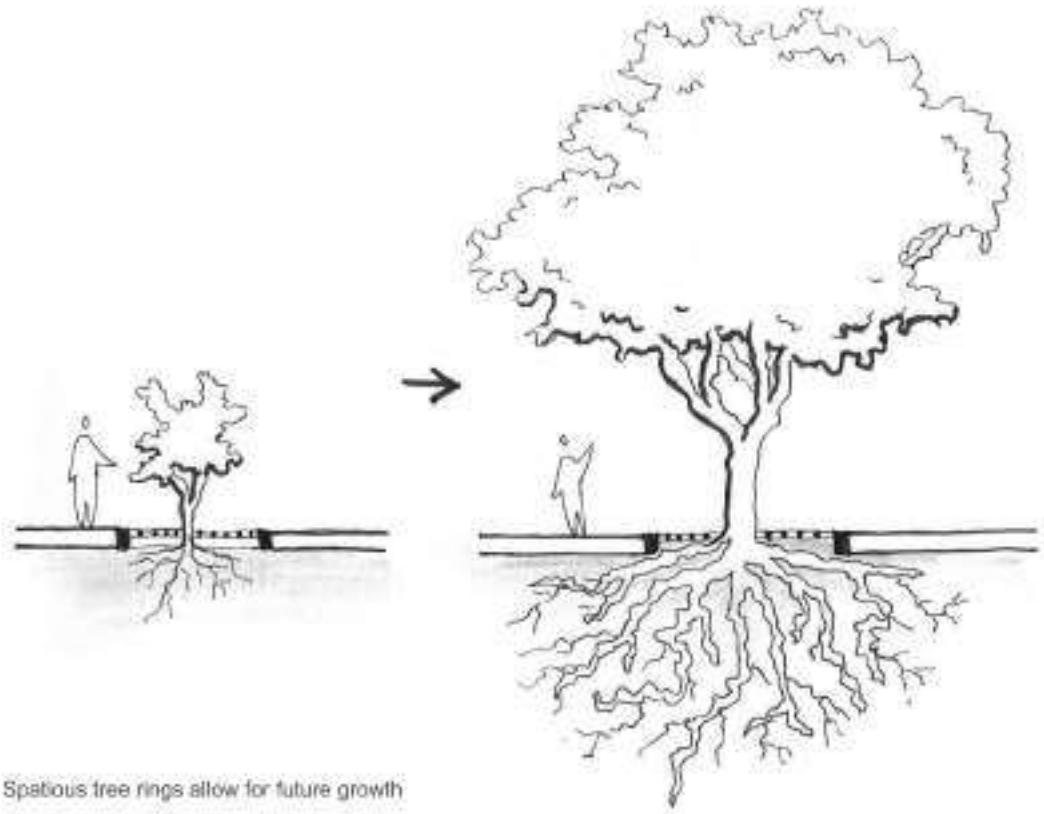
Thoroughfare is provided; unsafe spaces can be fleed

N5.2 - NO SEATING PROVIDED ON BARREN INTERFACES

INSTANCE N7: ENCLOSED UNSAFE SPACES
CATEGORY: NEGLIGENT DESIGN

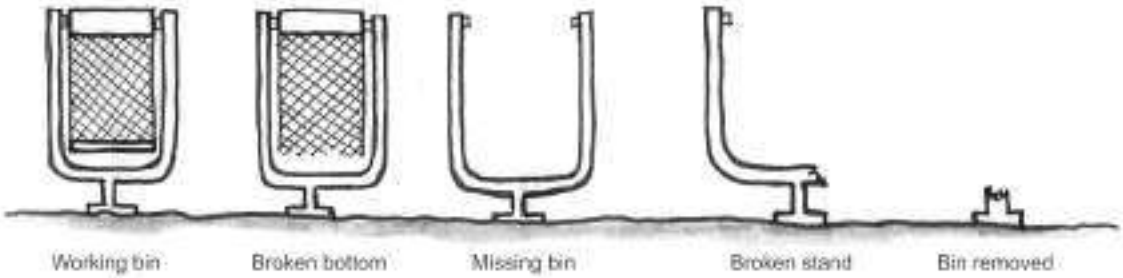


Tight tree rings are outgrown and cause uneven pavement issues

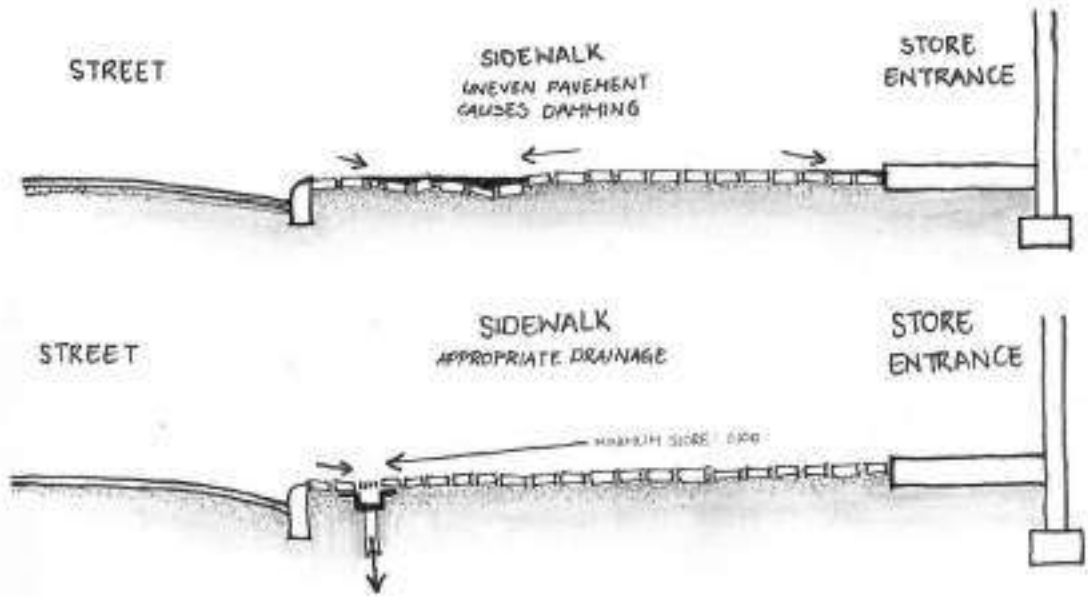


Spatious tree rings allow for future growth

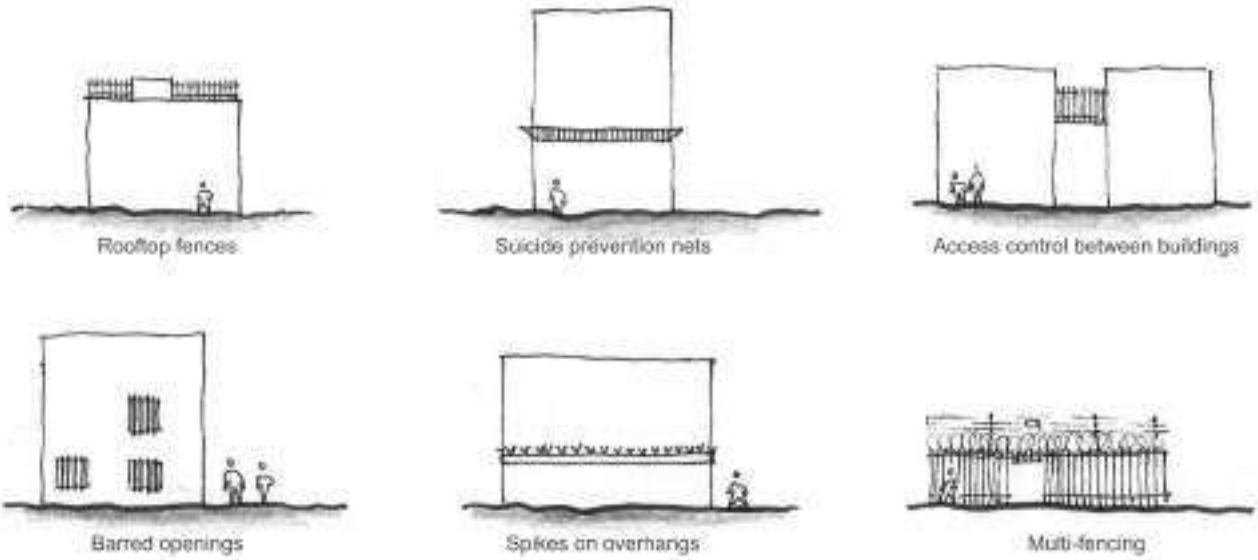
INSTANCE S1: OUTGROWN TREE RINGS
CATEGORY: SHORT-SIGHTED DESIGN



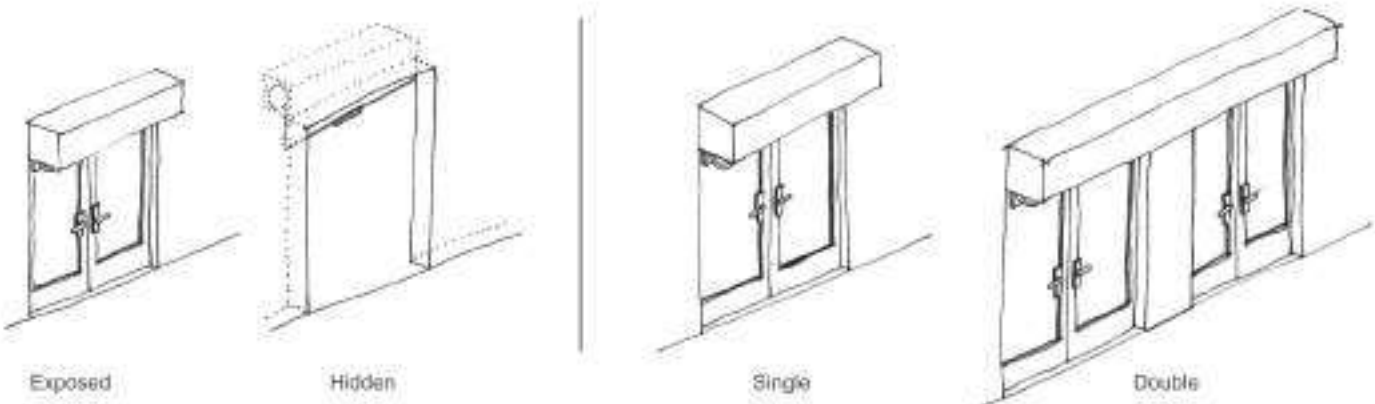
INSTANCE NA1: BROKEN BINS
CATEGORY: NON-ACTION



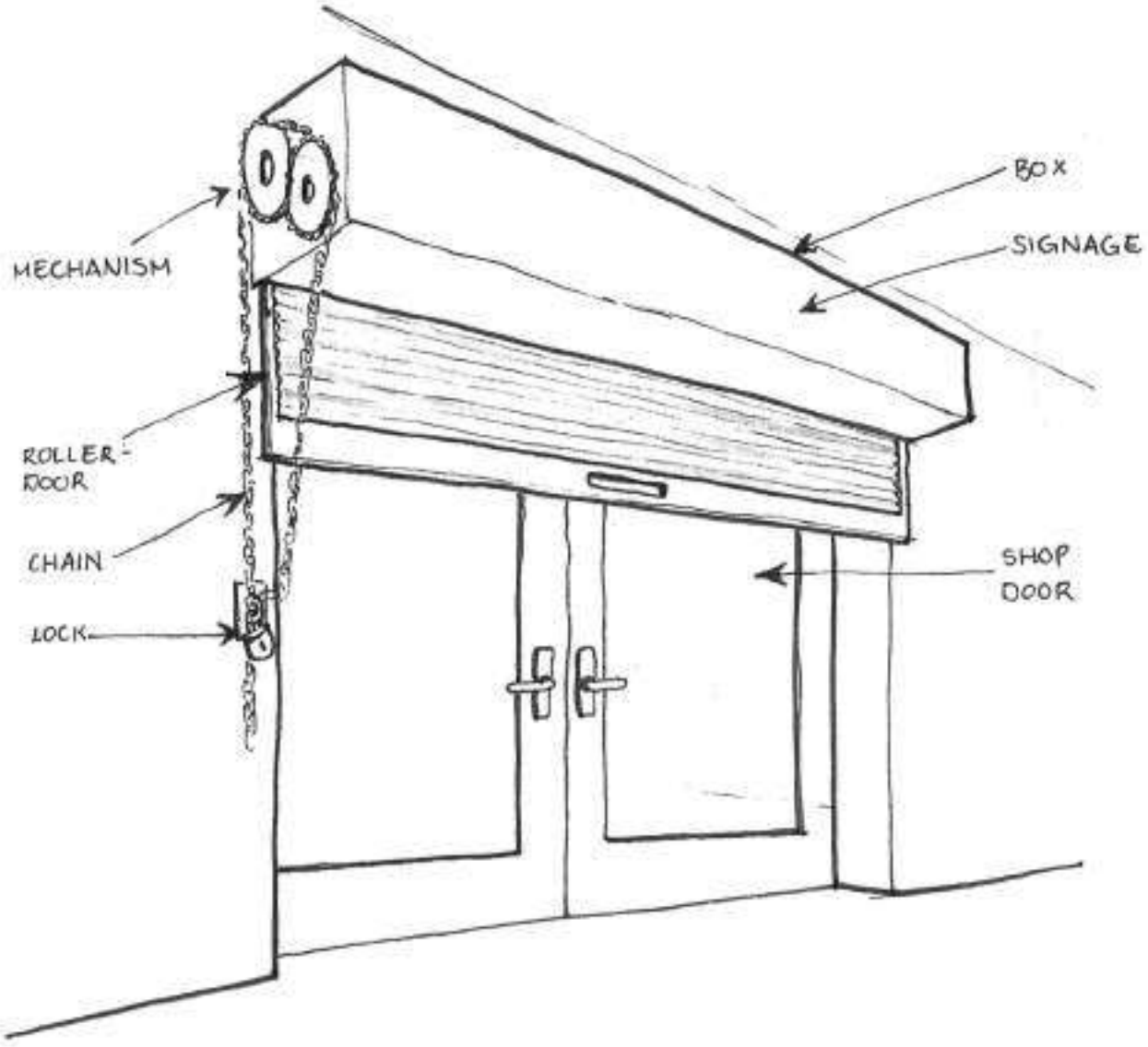
INSTANCE NA2: IMPROPER DRAINAGE
CATEGORY: NON-ACTION



INSTANCE O2: FENCES ABOVE STREET LEVEL
CATEGORY: OTHER



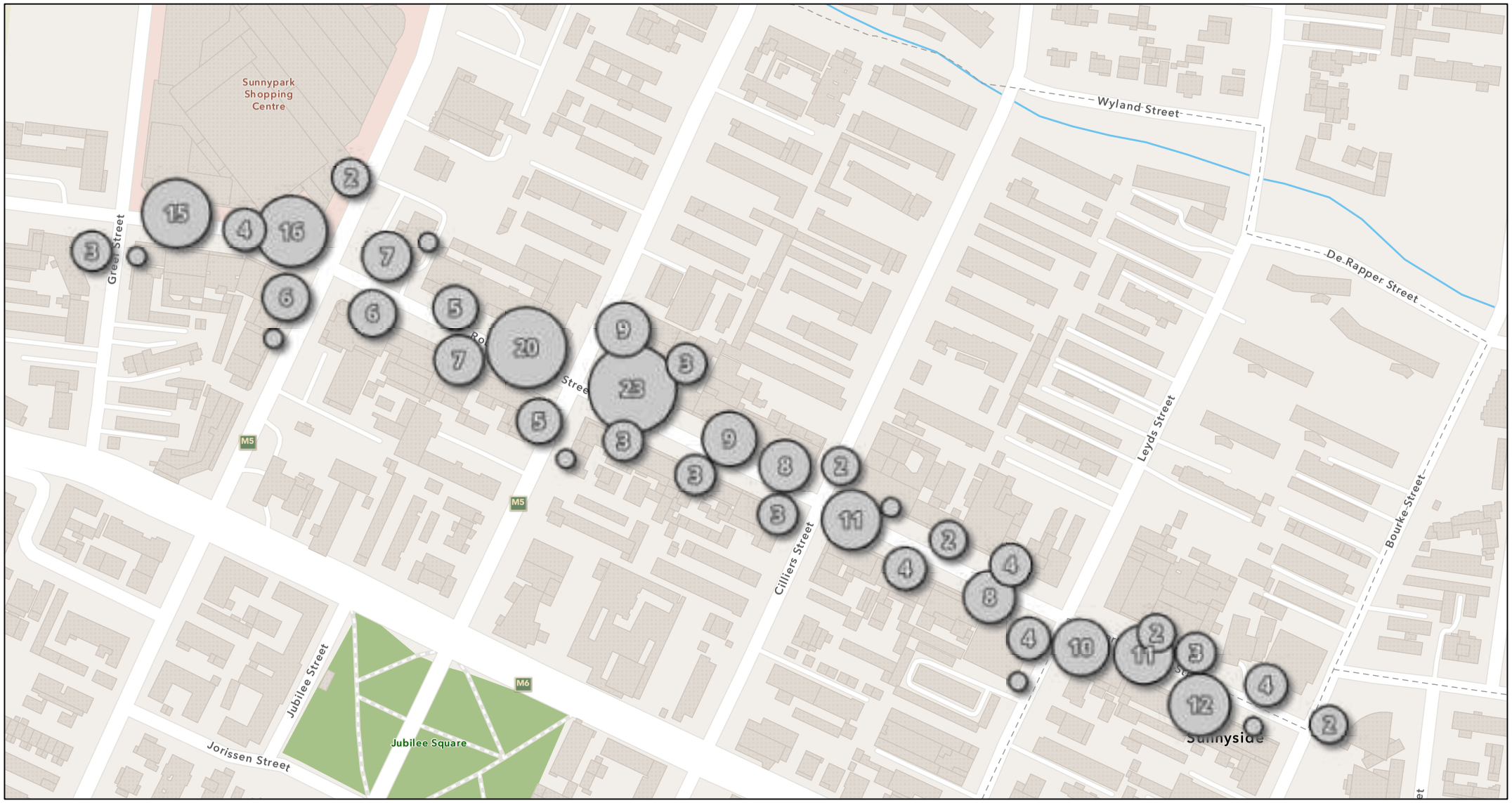
O2.1 - ROLLER-SHUTTER DOOR TYPOLOGIES



O2.1 - PARTS OF A ROLLER-SHUTTER DOOR

INSTANCE O2: ROLLER-SHUTTER DOORS
CATEGORY: HOSTILE DESIGN

AGGREGATED MEASURES 1: 2500 (300 DPI)



4/4/2024

1:2,500

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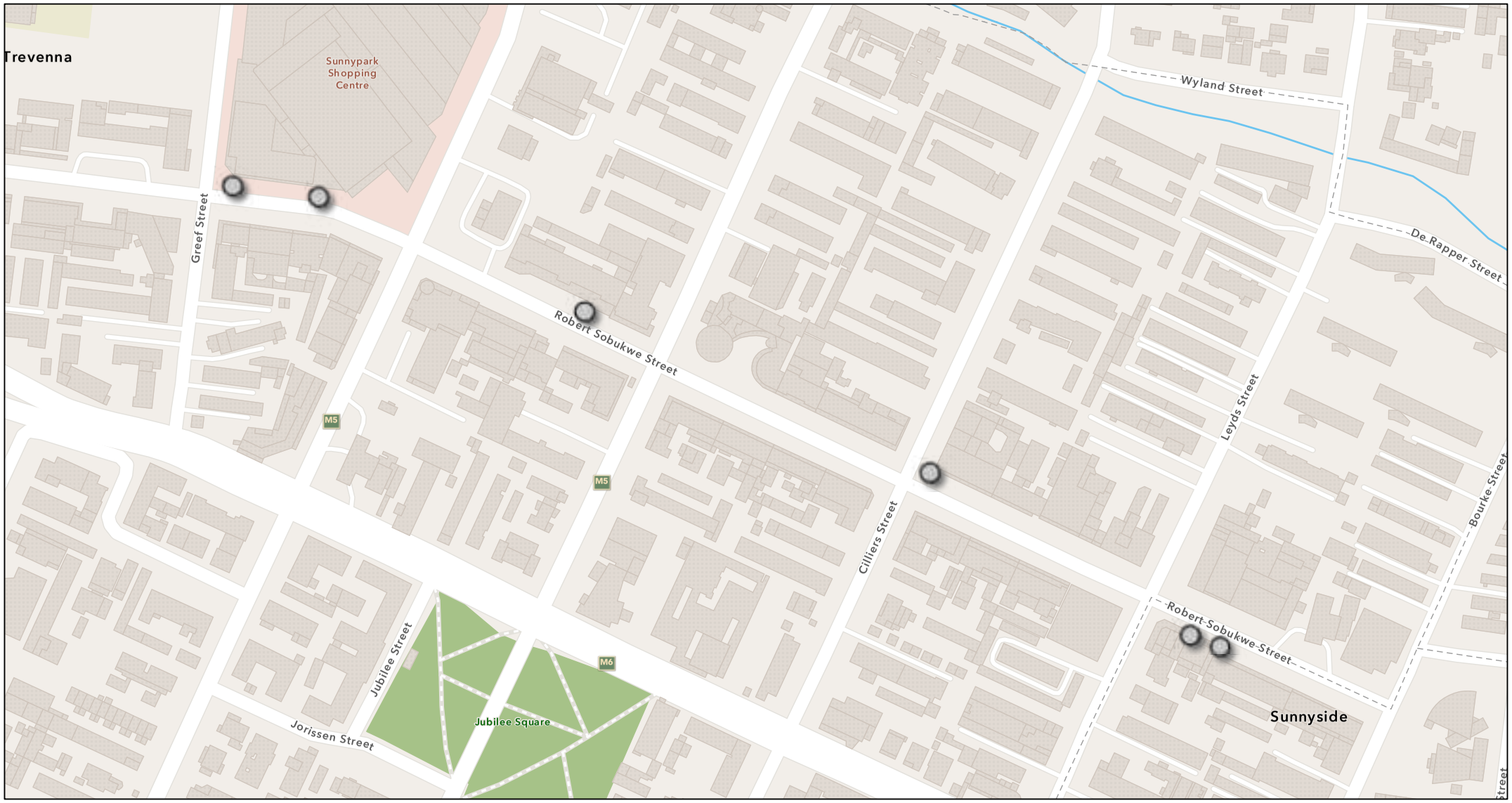
0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H1 UNHYGEINIC SURFACES



4/14/2024

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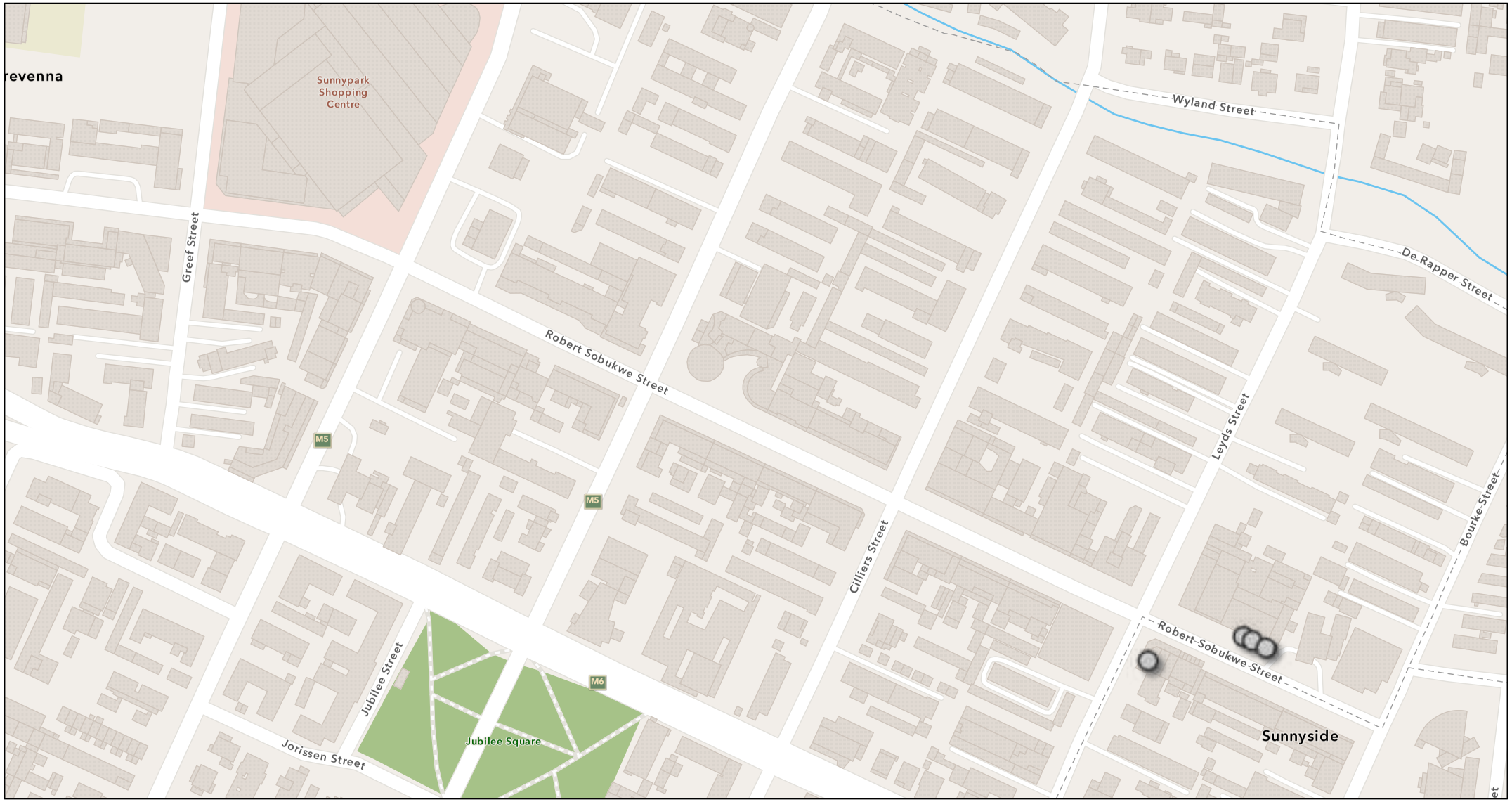
Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H2 ANTI-SITTING SPIKES



4/14/2024

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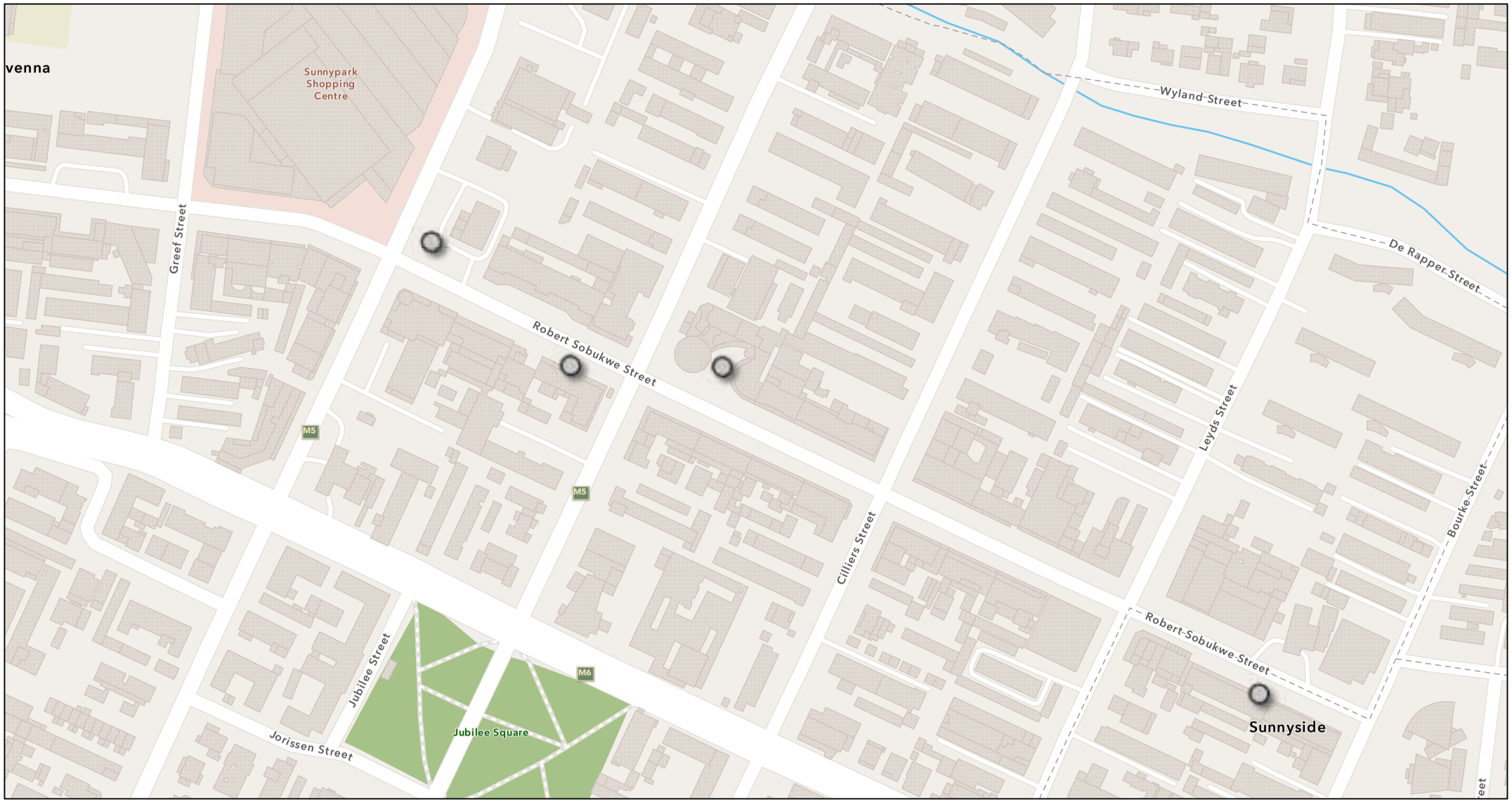
Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H3 AWKWARDLY HIGH STEPS



4/14/2024

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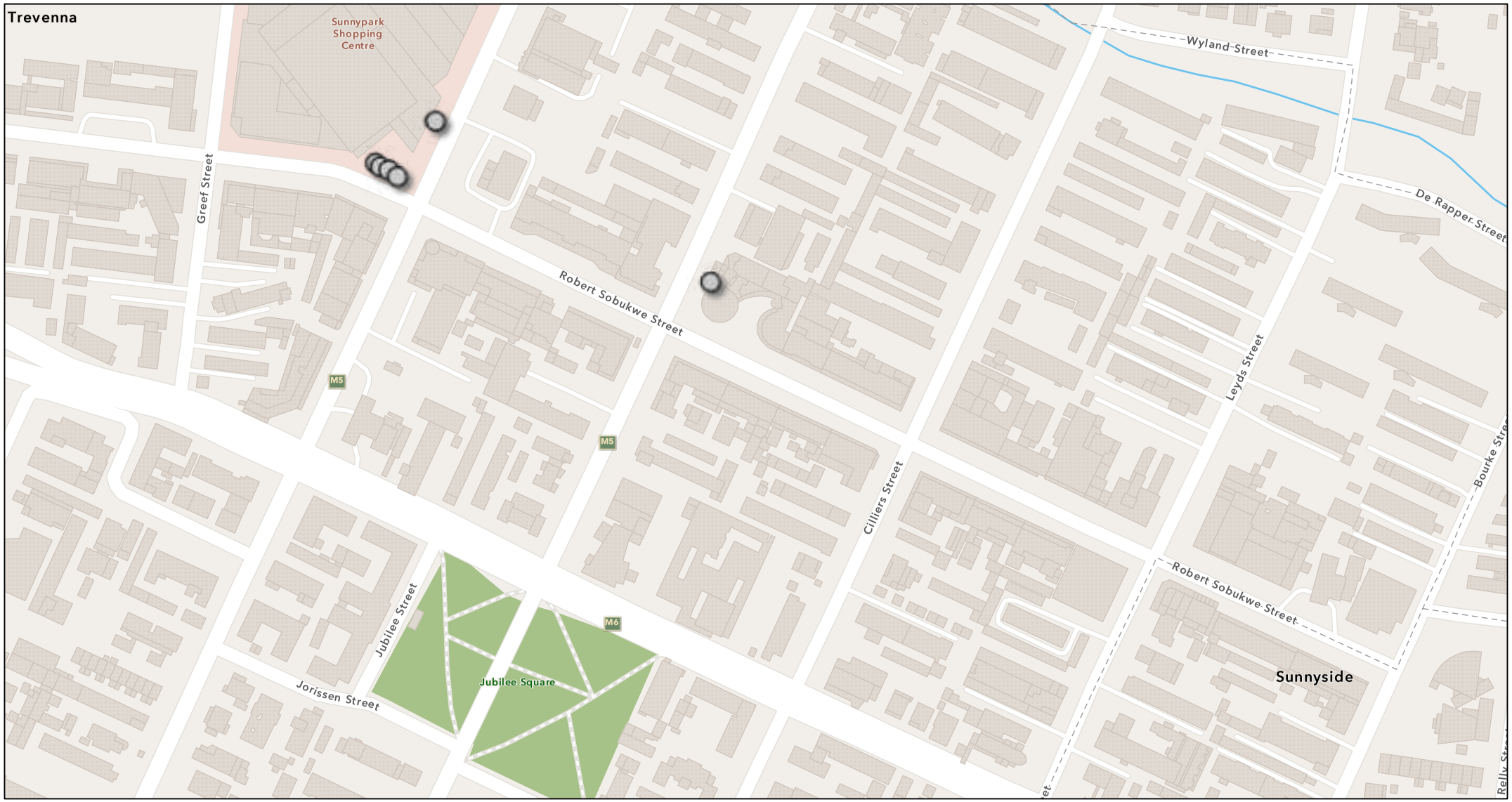
0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H4 STANDING SEATING



4/14/2024

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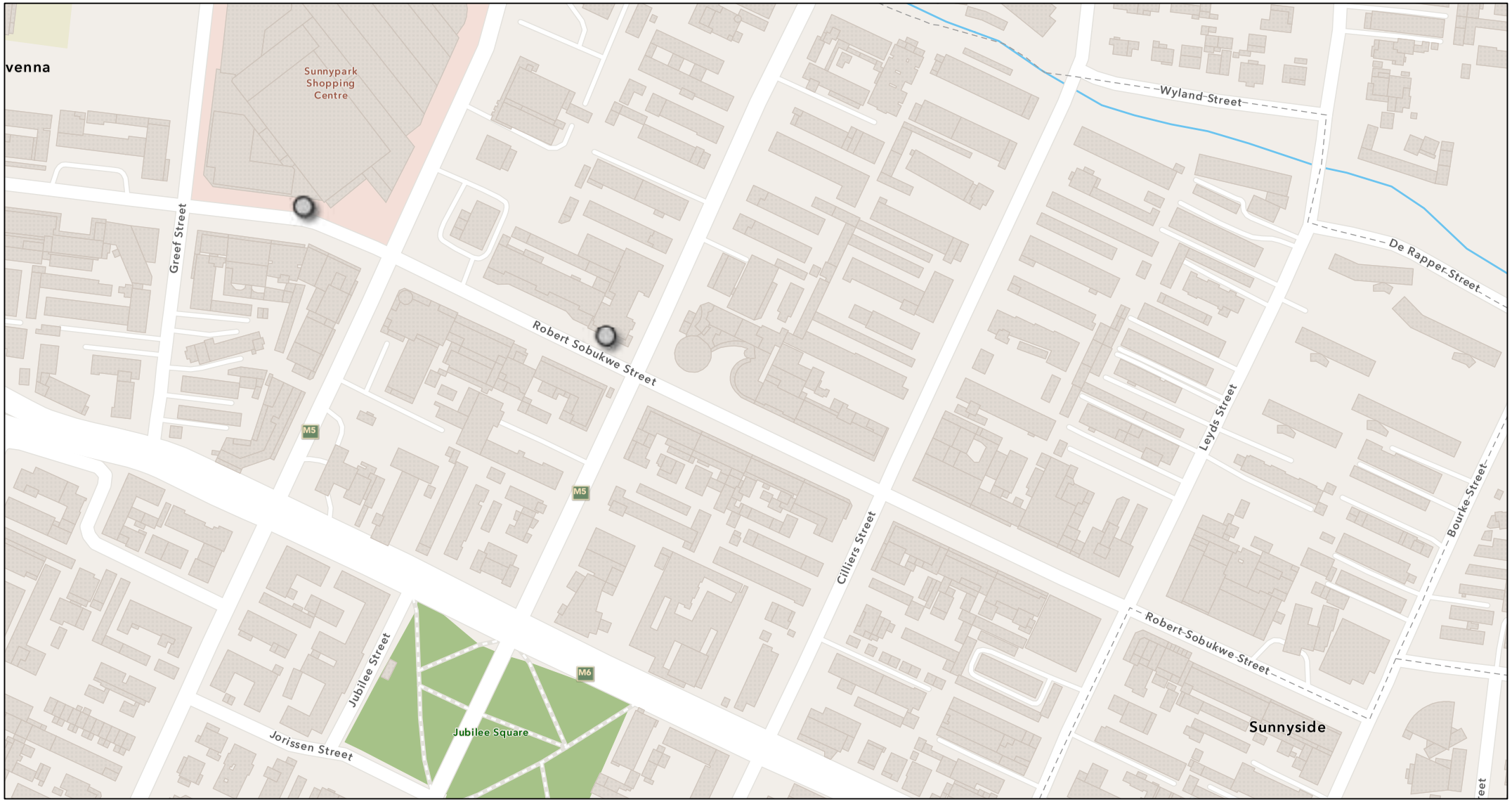
0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H5 SLANTED SEATING



4/14/2024

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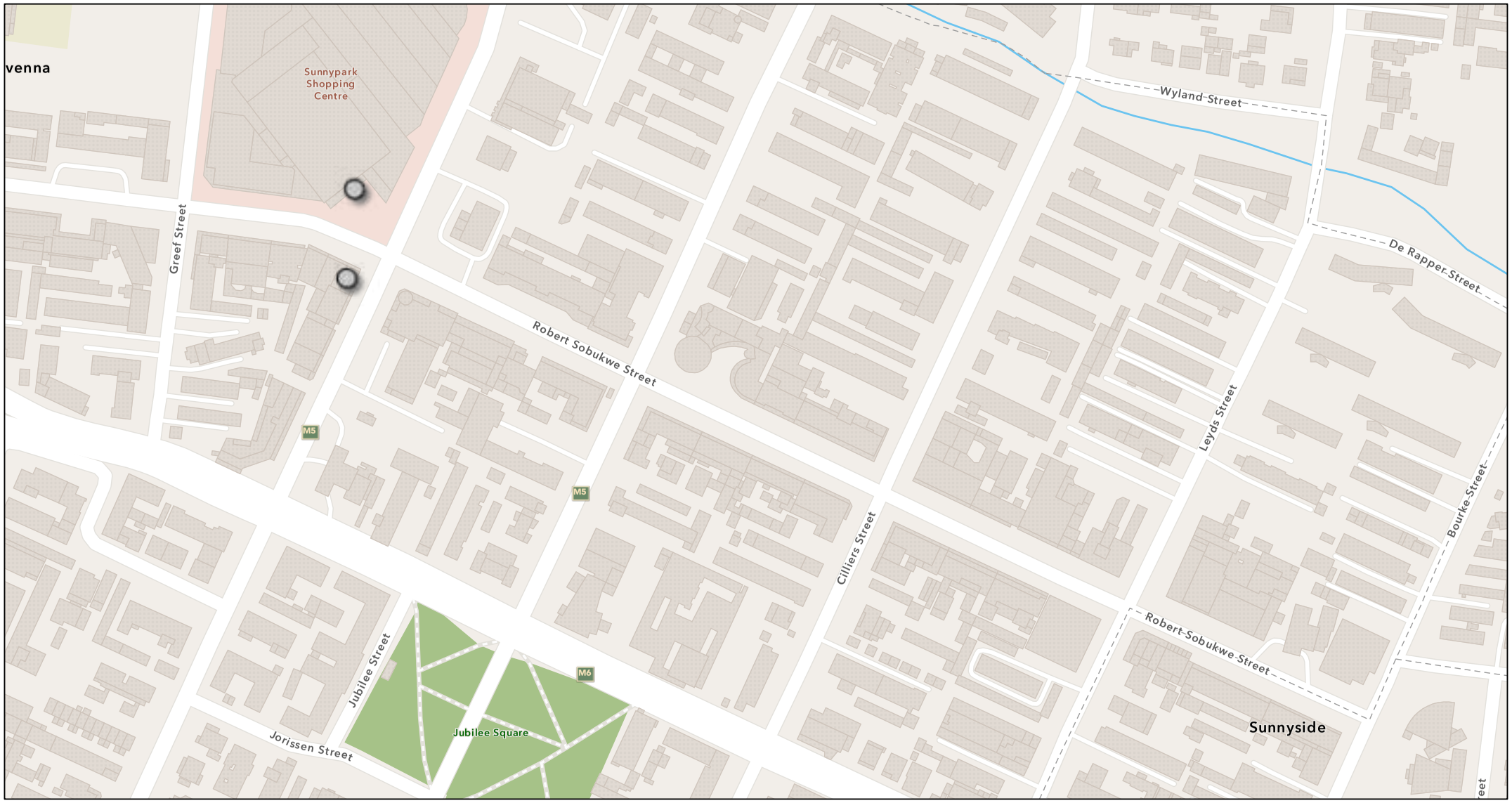
Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H6 ROLLER SHUTTER DOORS



4/14/2024

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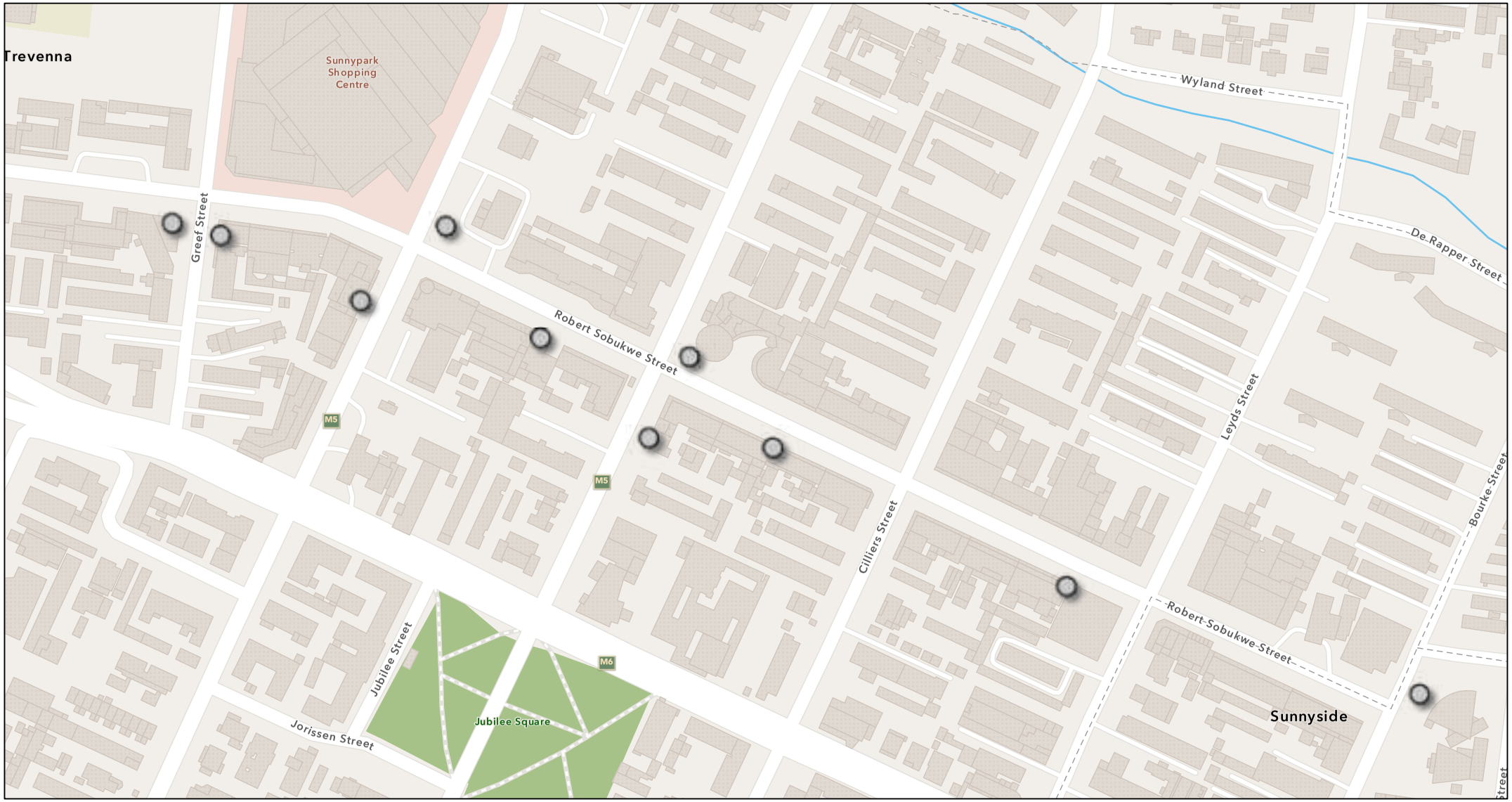
0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H7 PALLISADES



4/14/2024

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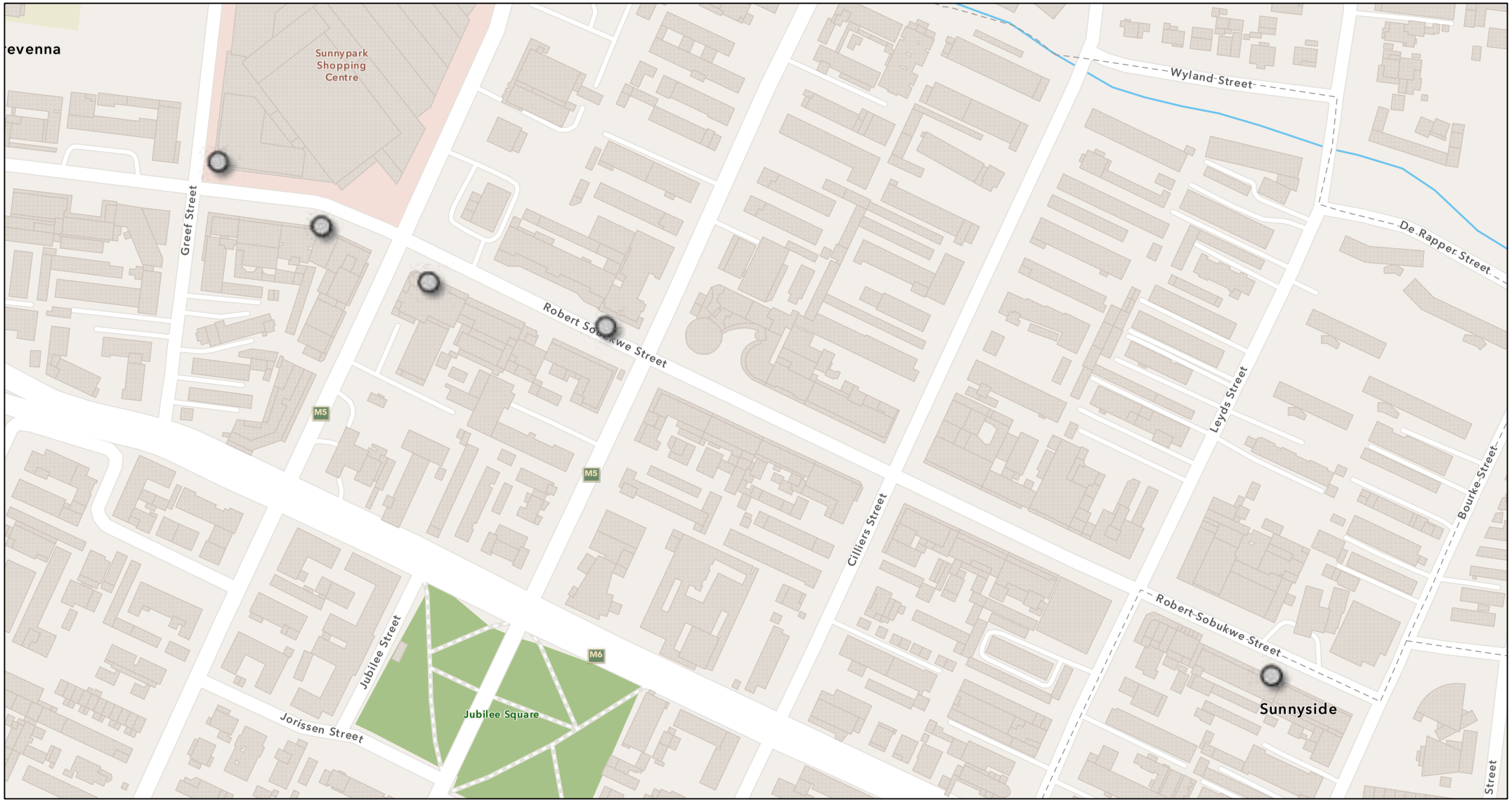
Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H8 LOW FENCES



4/14/2024

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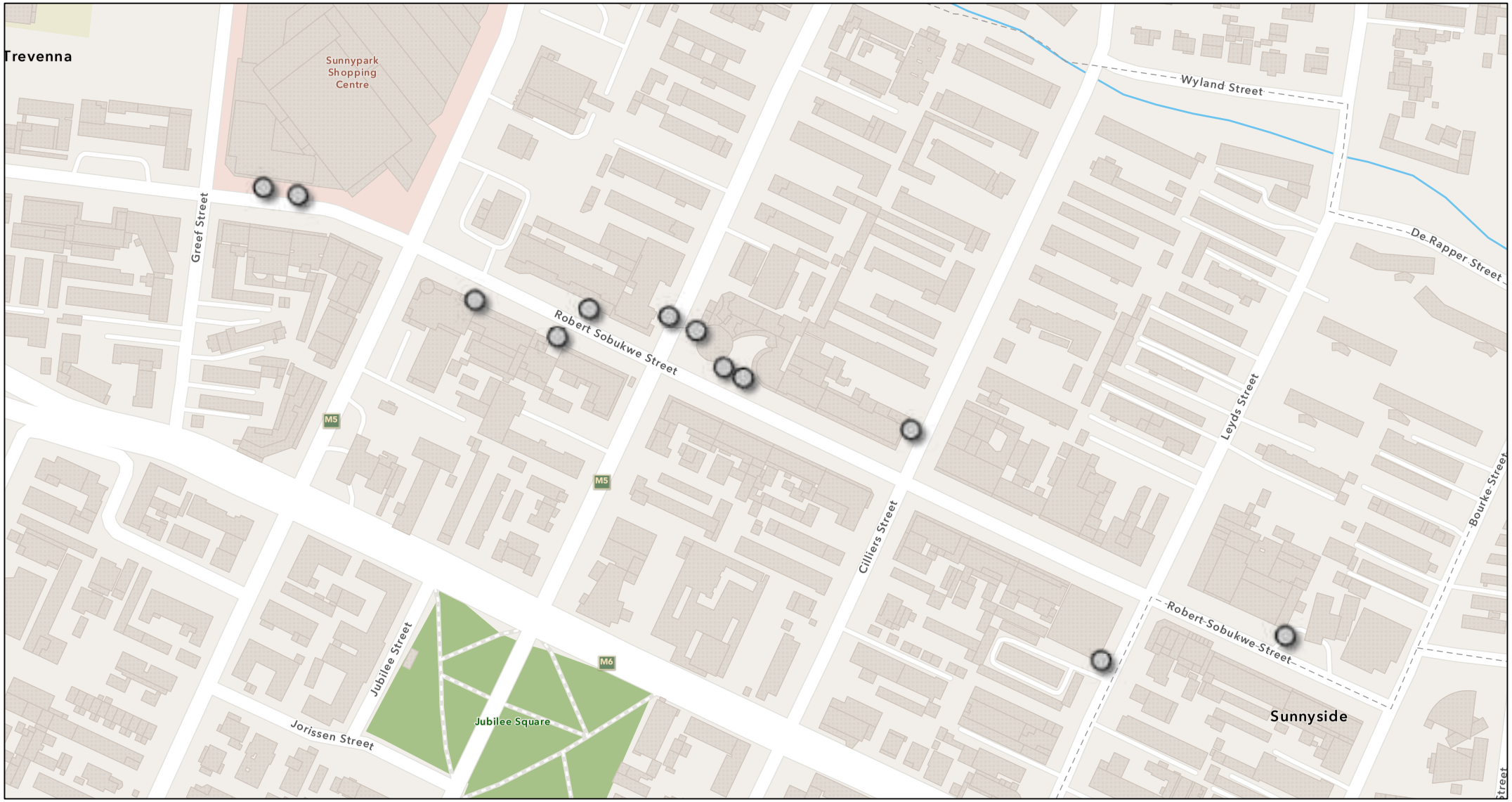
Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H9 BOLLARDS



4/14/2024

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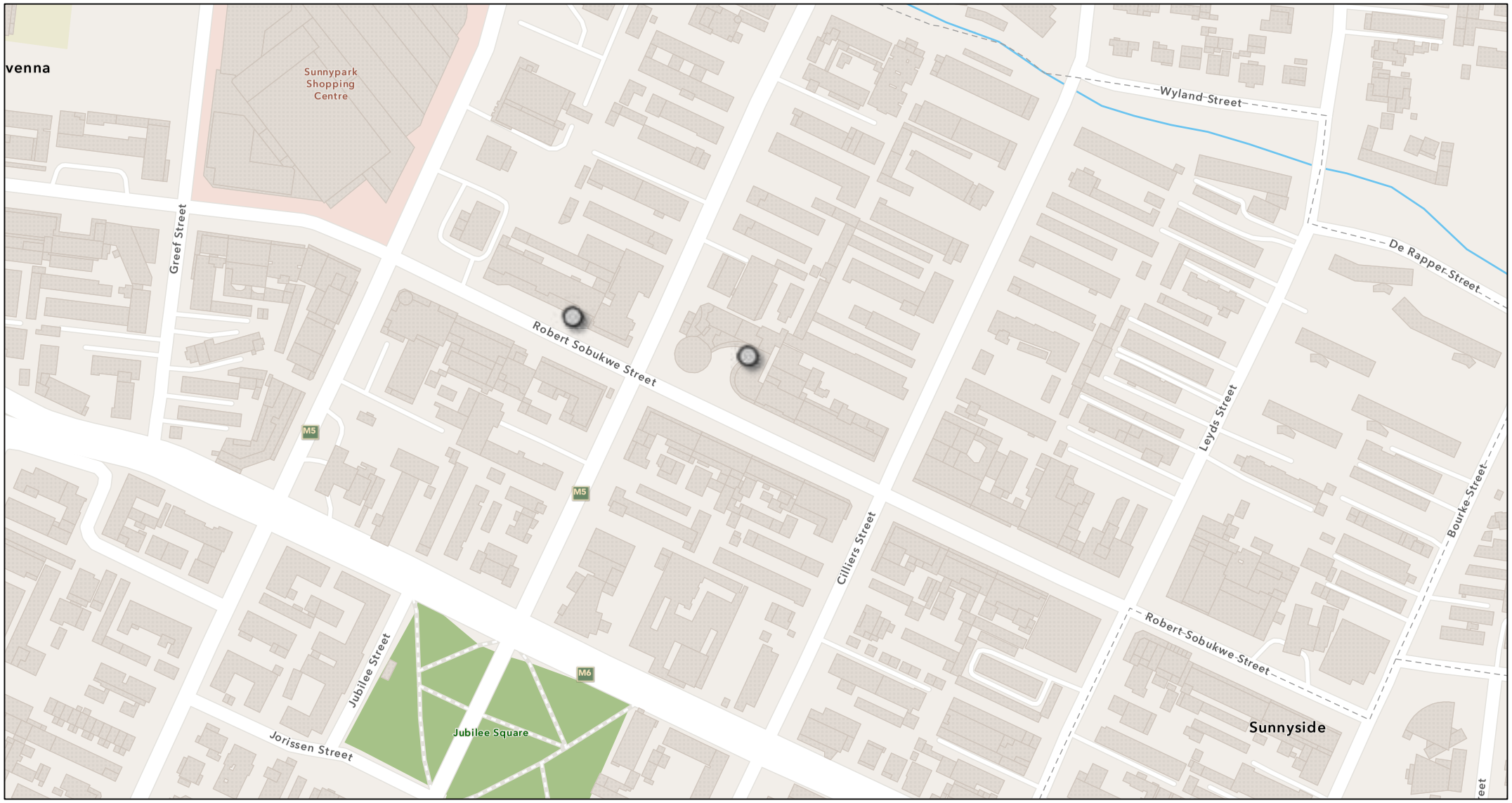
Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H10 SECURITY GATES



4/14/2024

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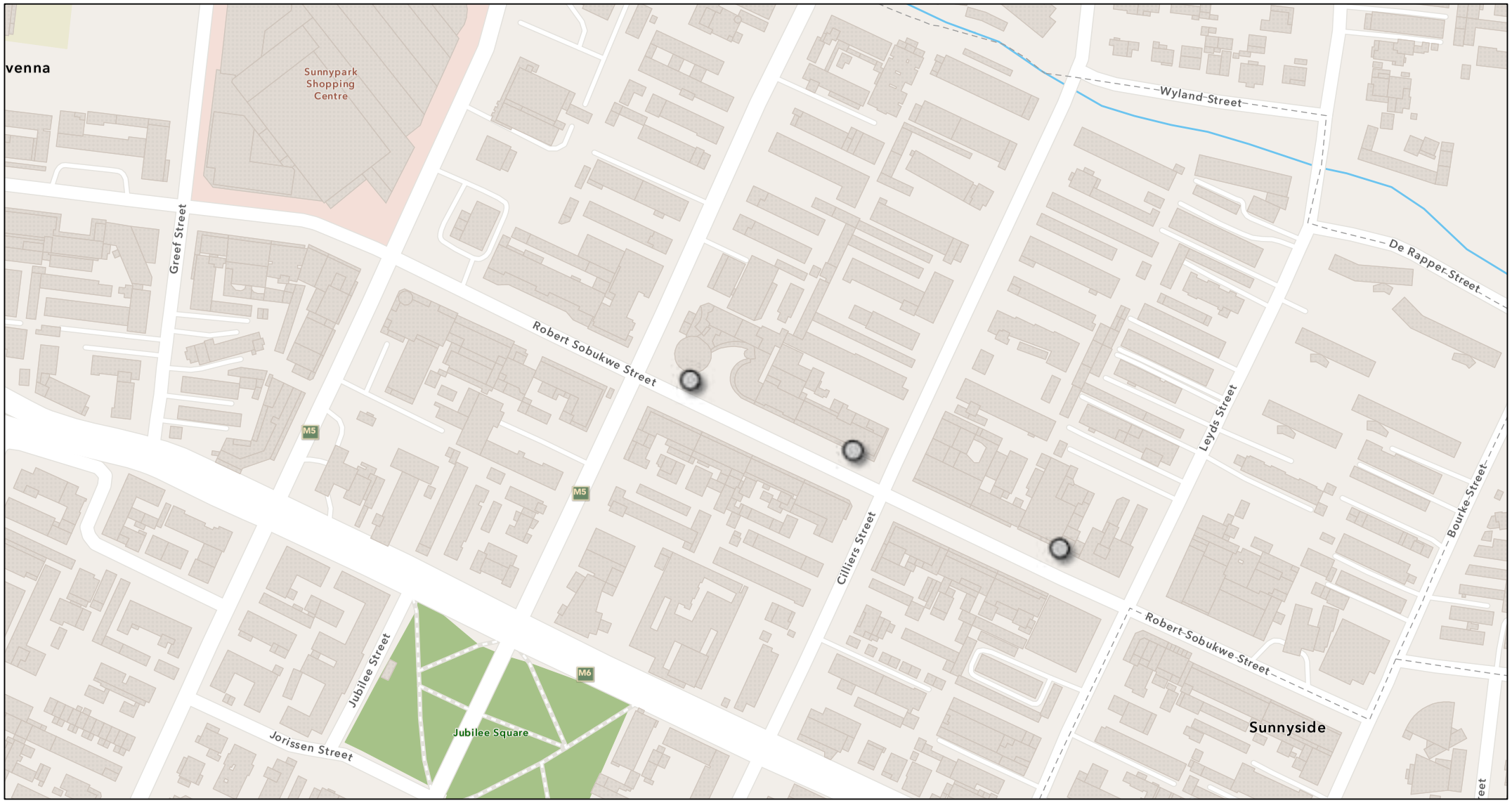
0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H11 TURNSTILES



4/14/2024

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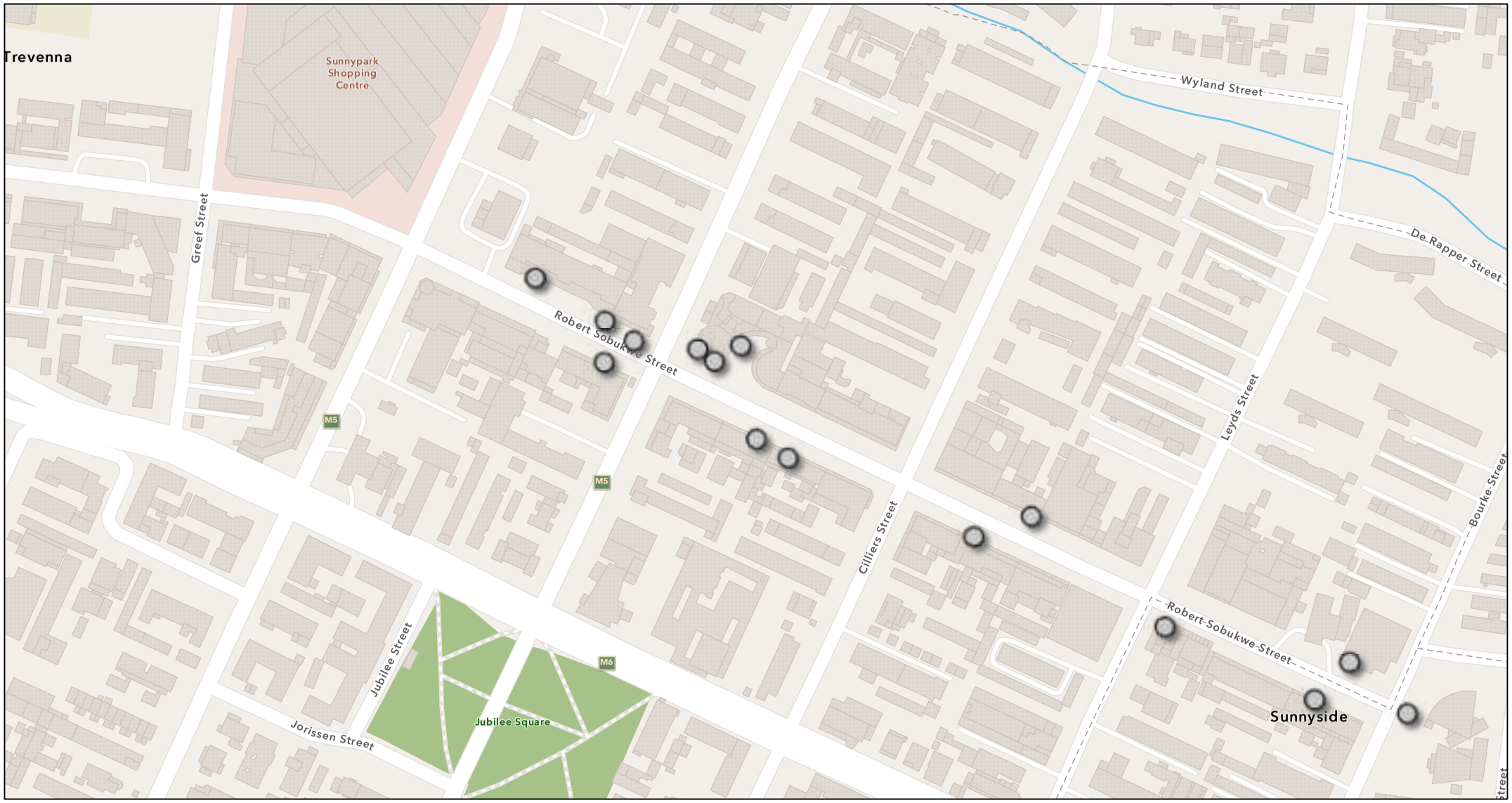
0 0.04 0.09 0.17 km

H12 STEPS BY ENTRANCES



4/14/2024

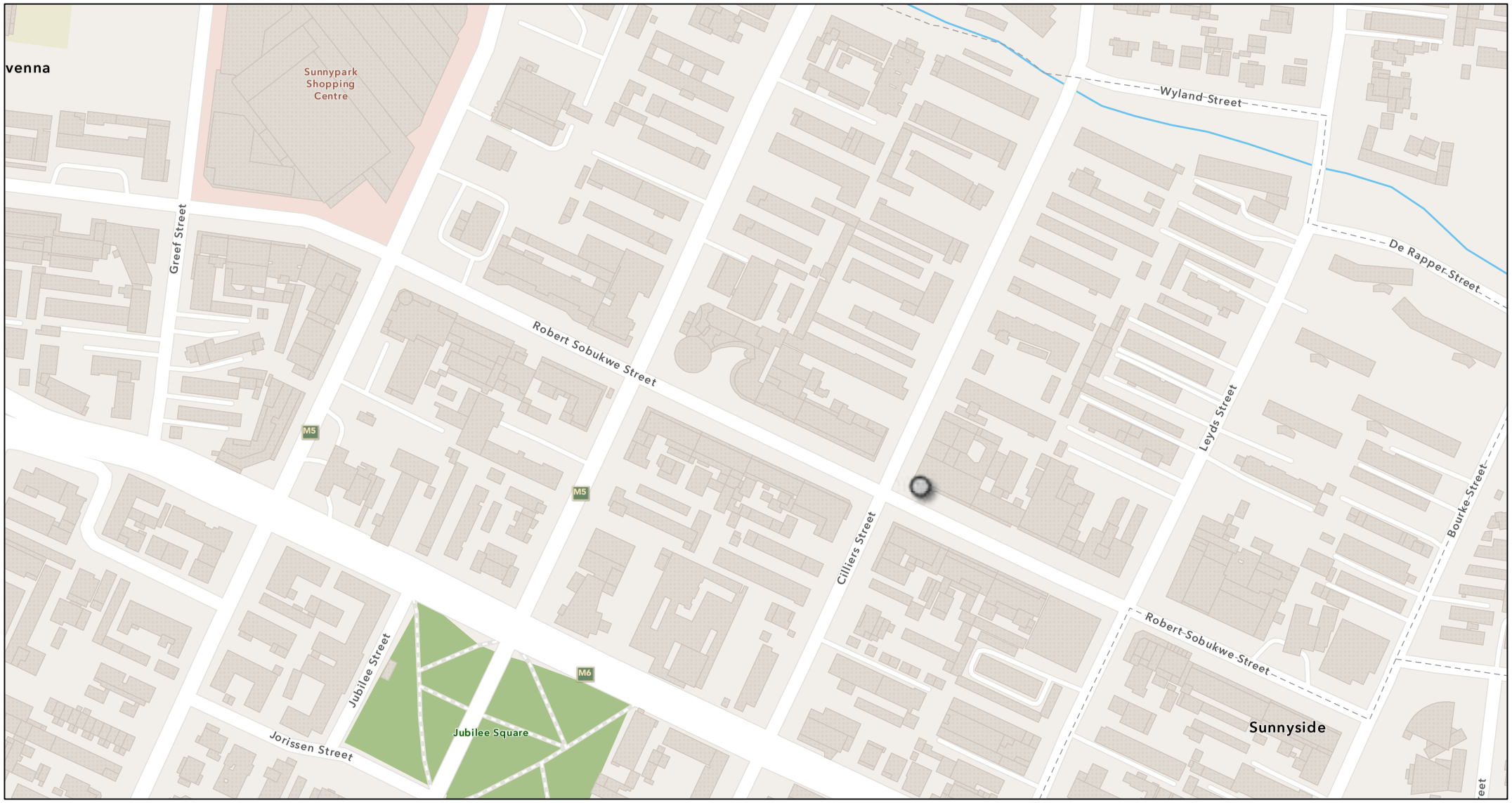
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H13 VEHICLE BARRIERS



4/14/2024

1:2,500

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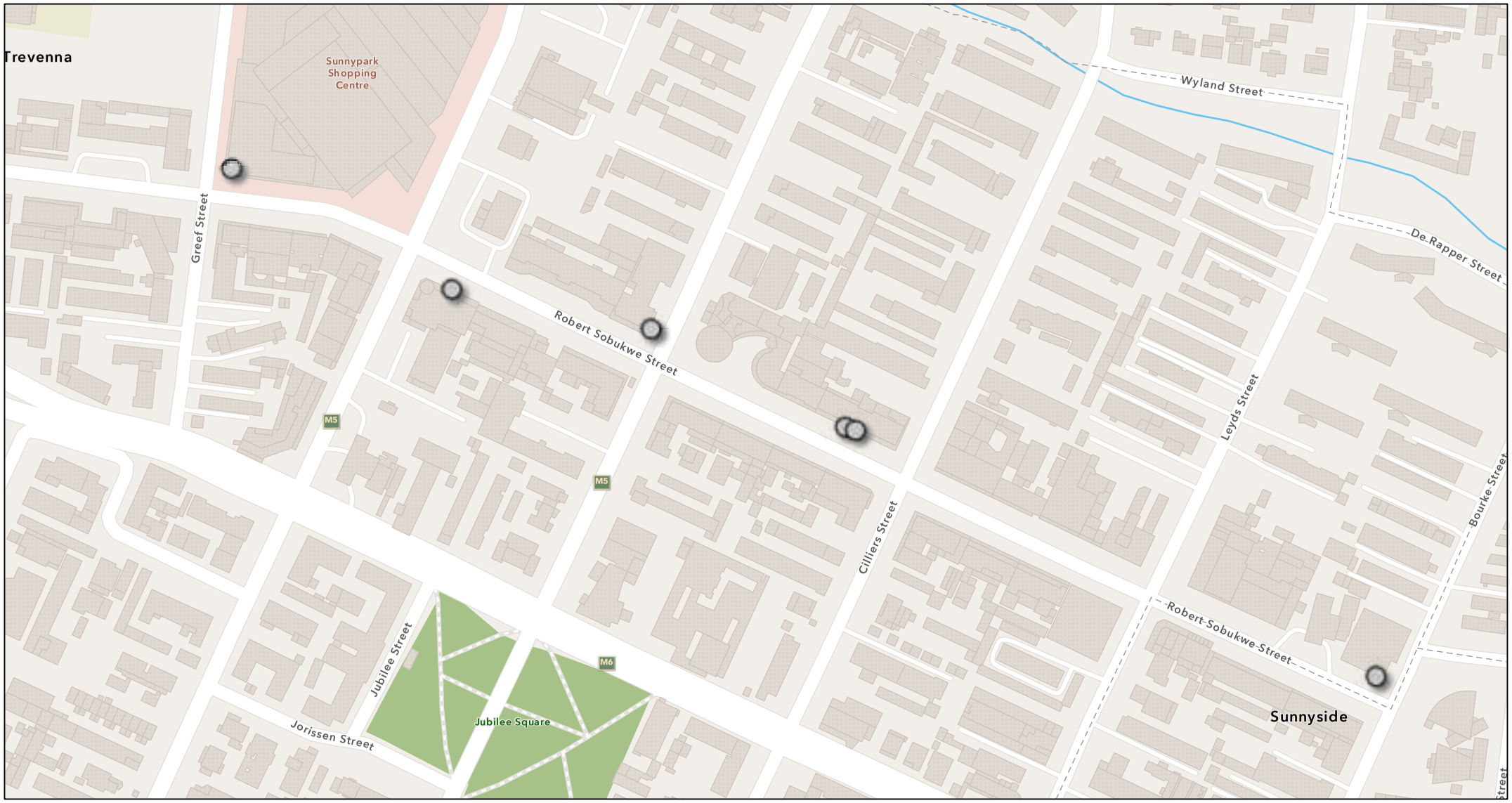
0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H14 SUBSTANDARD RAMPS



4/14/2024

1:2,500

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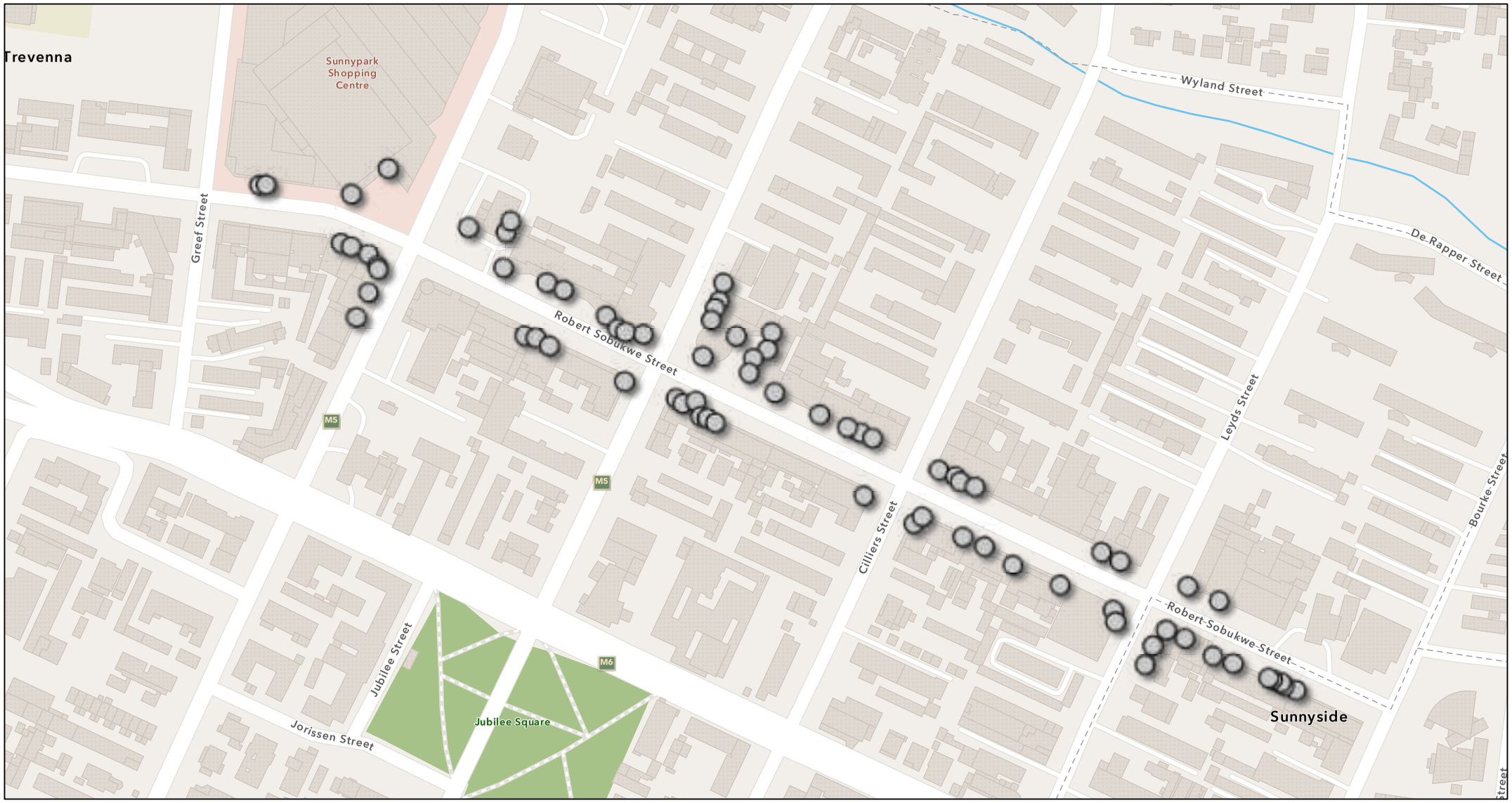
0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H15 SURVEILLANCE CAMERAS



4/14/2024

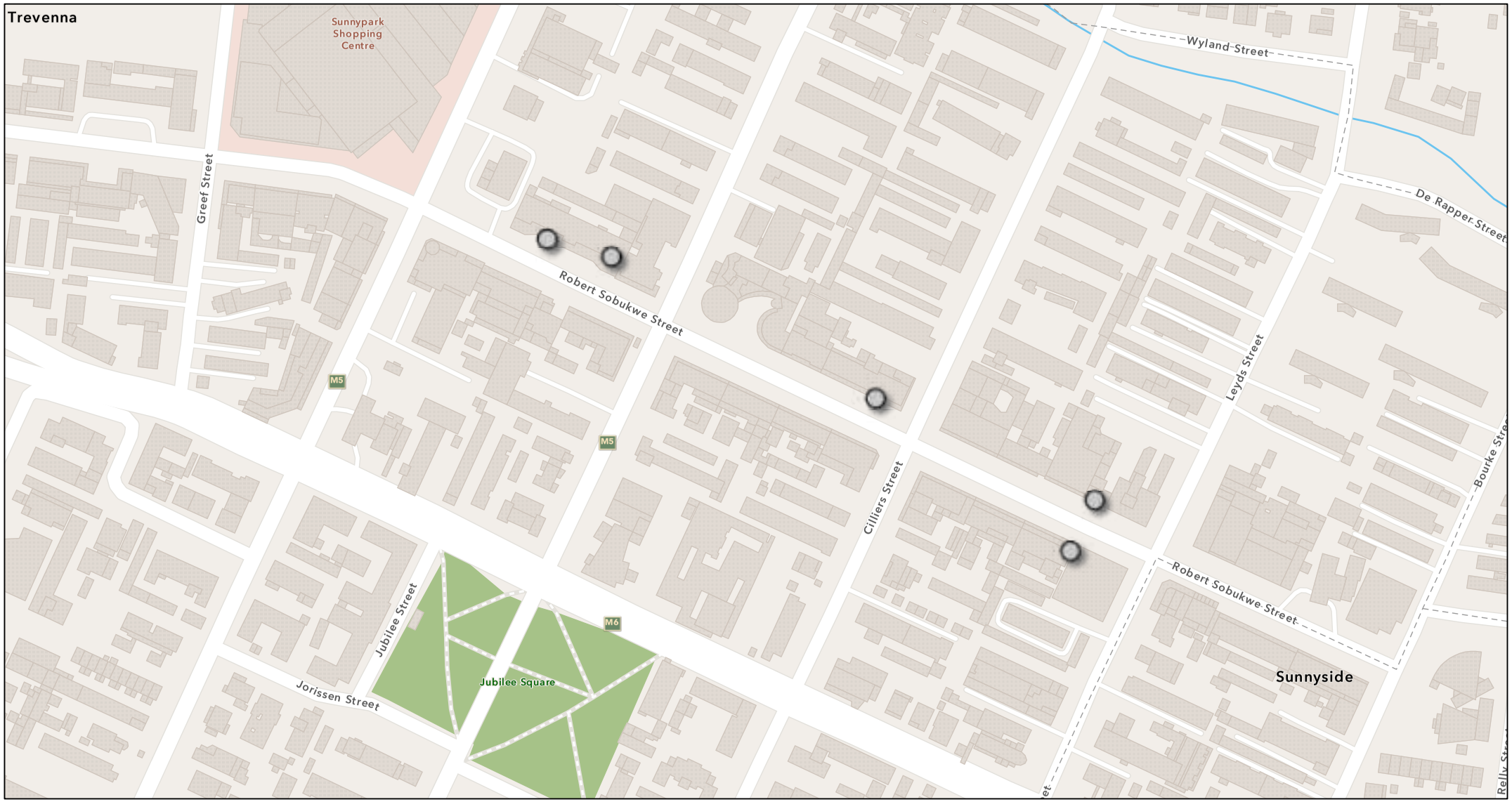
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H16 SIGNAGE THAT DISALLOWS CERTAIN ACTION



4/14/2024

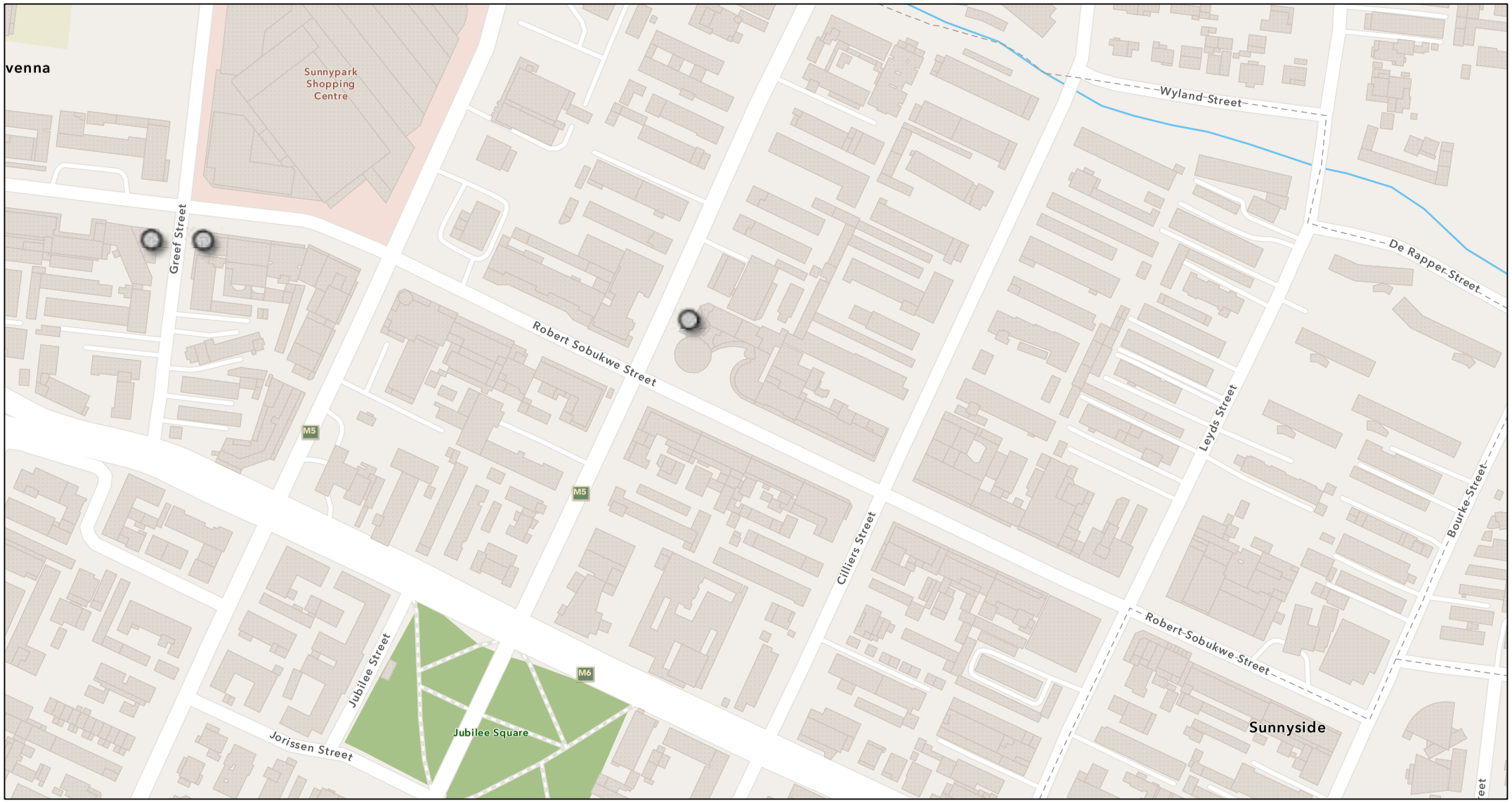
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H18 ENCLOSED UNSAFE SPACES



4/14/2024

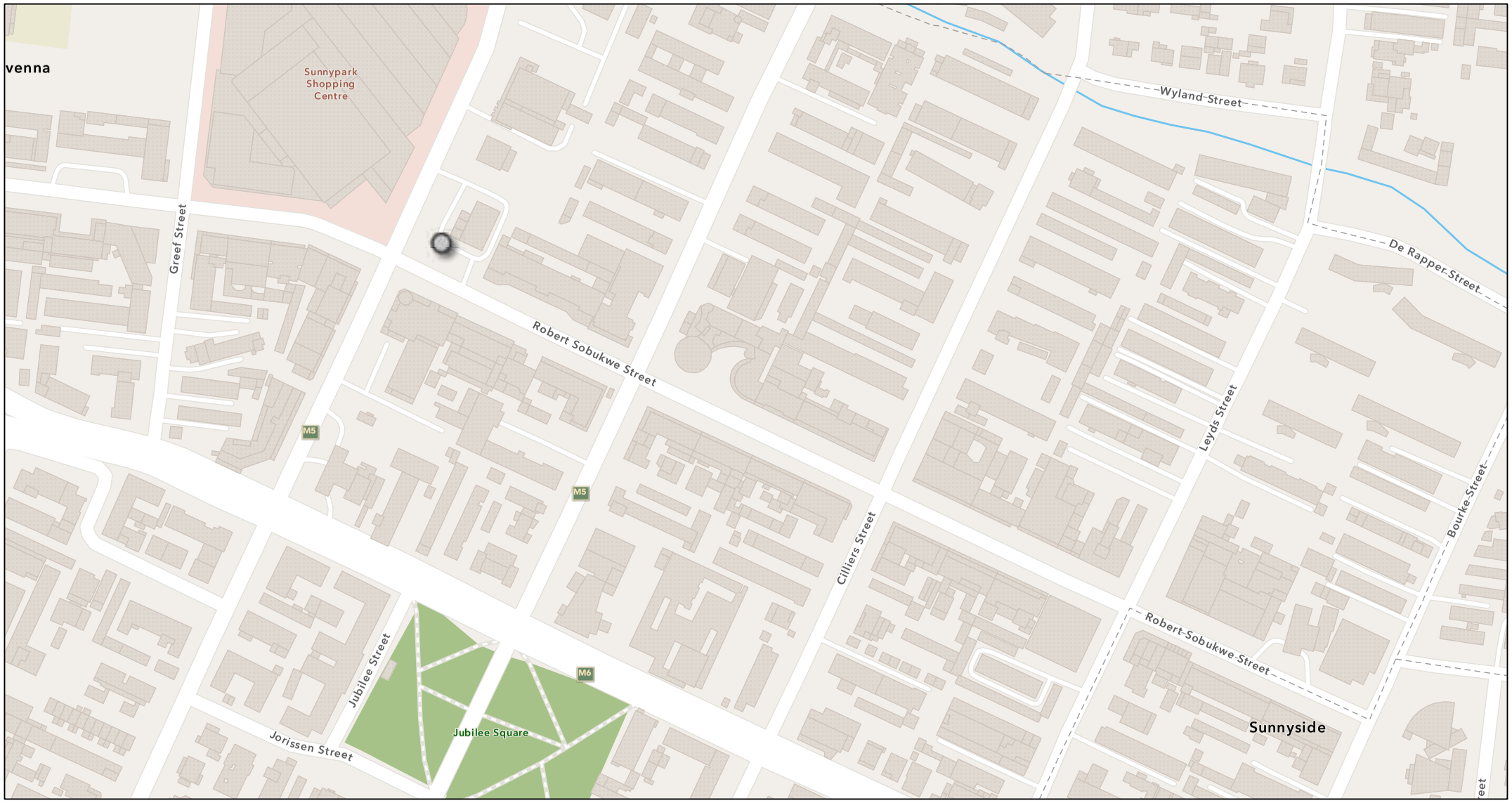
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H19 PEDESTRIAN UNFRIENDLY AREAS



4/14/2024

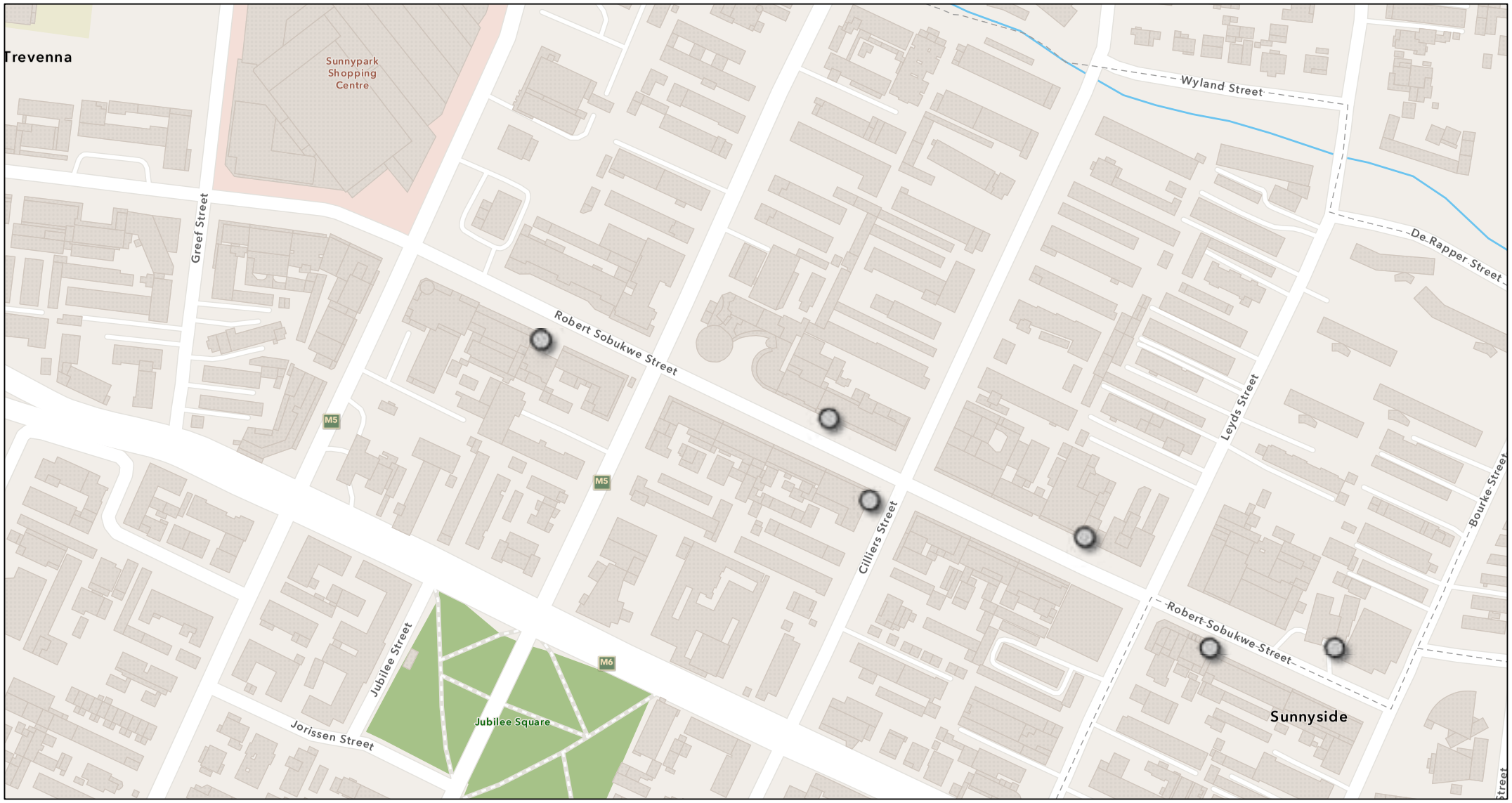
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H20 SURFACES WITH SPIKES



4/14/2024

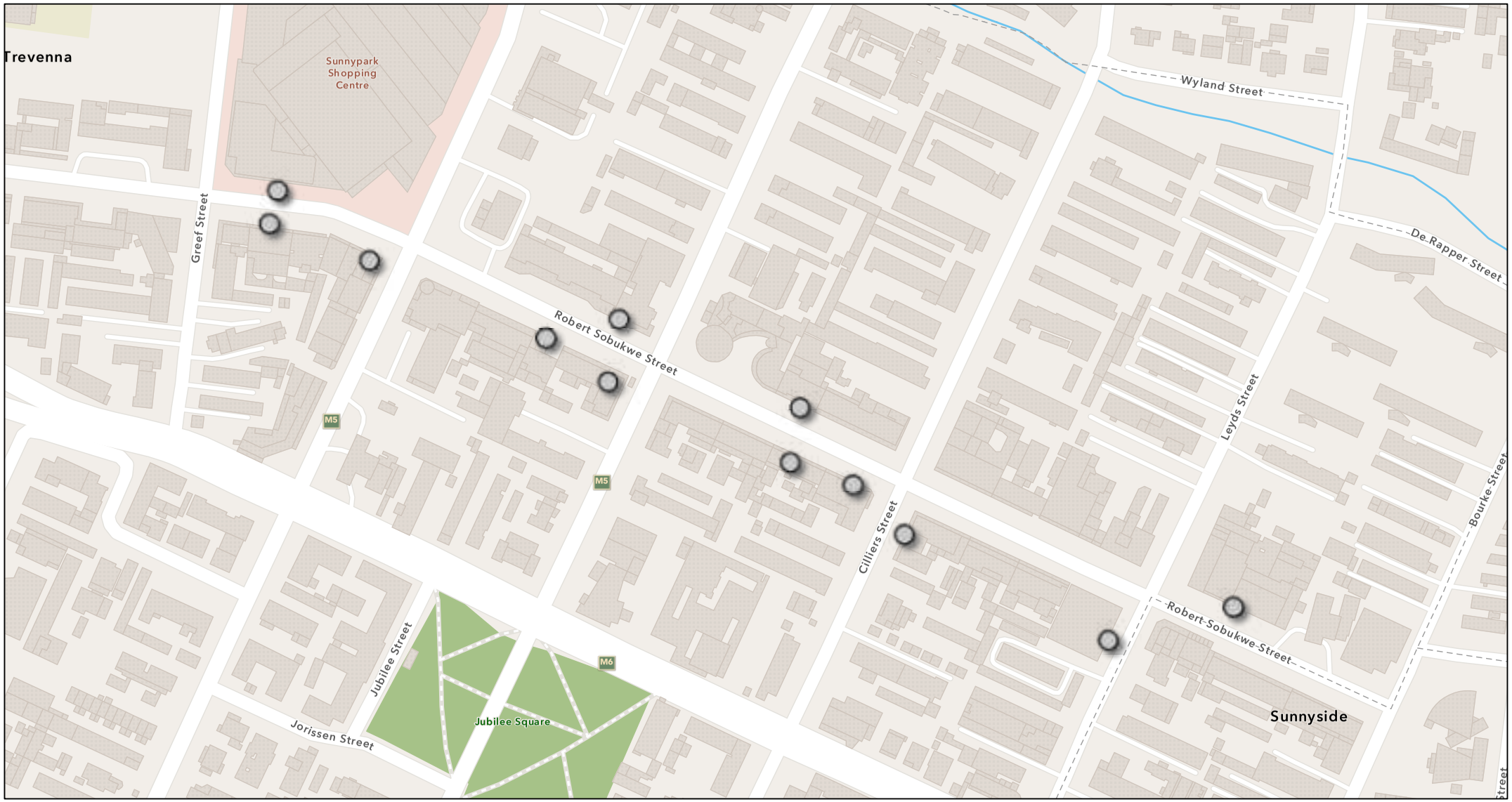
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

H21 FACADES THAT ARE ENCLOSED



4/14/2024

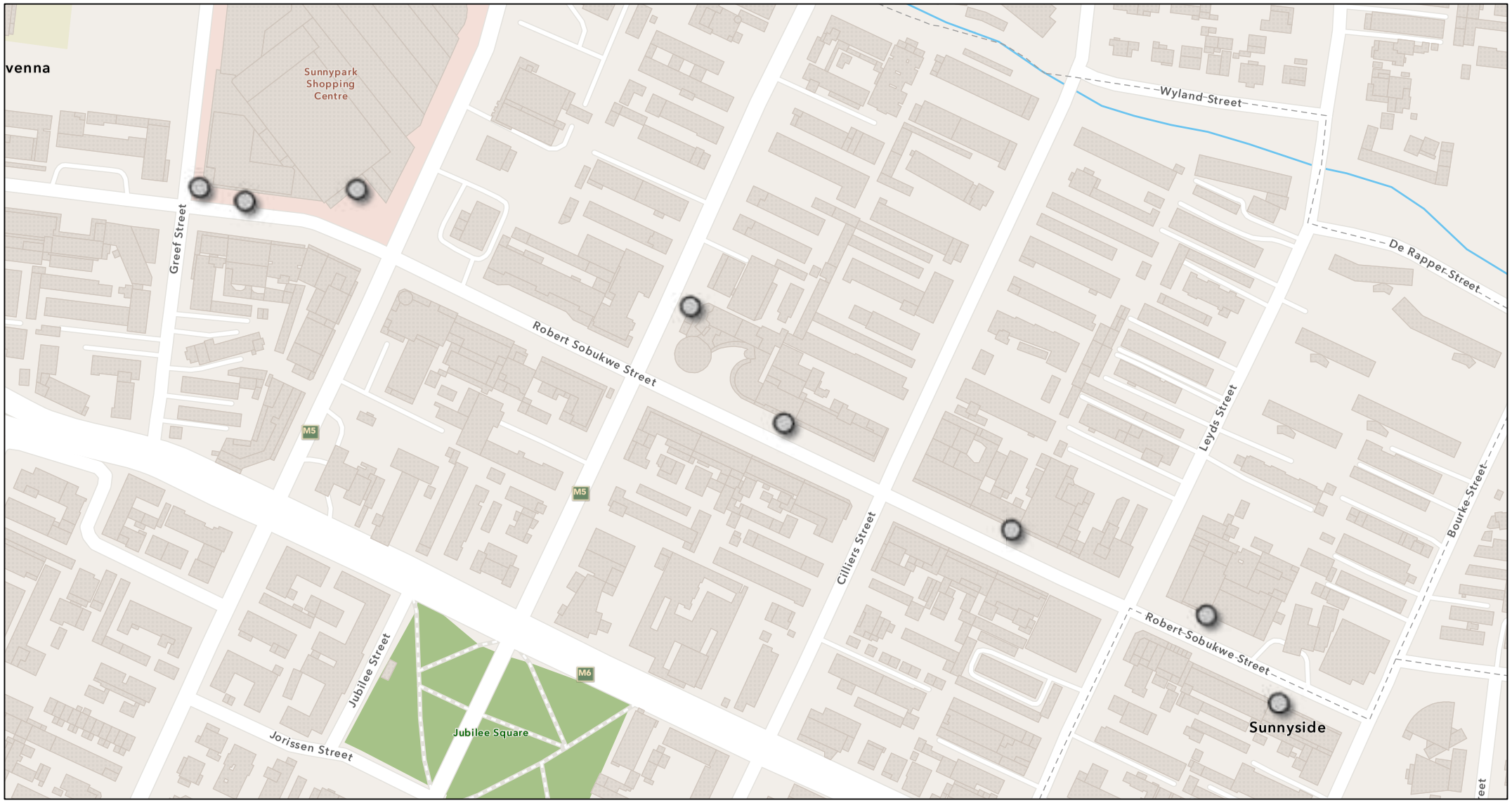
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

O1 ACTIVE SECURITY GUARDS



4/14/2024

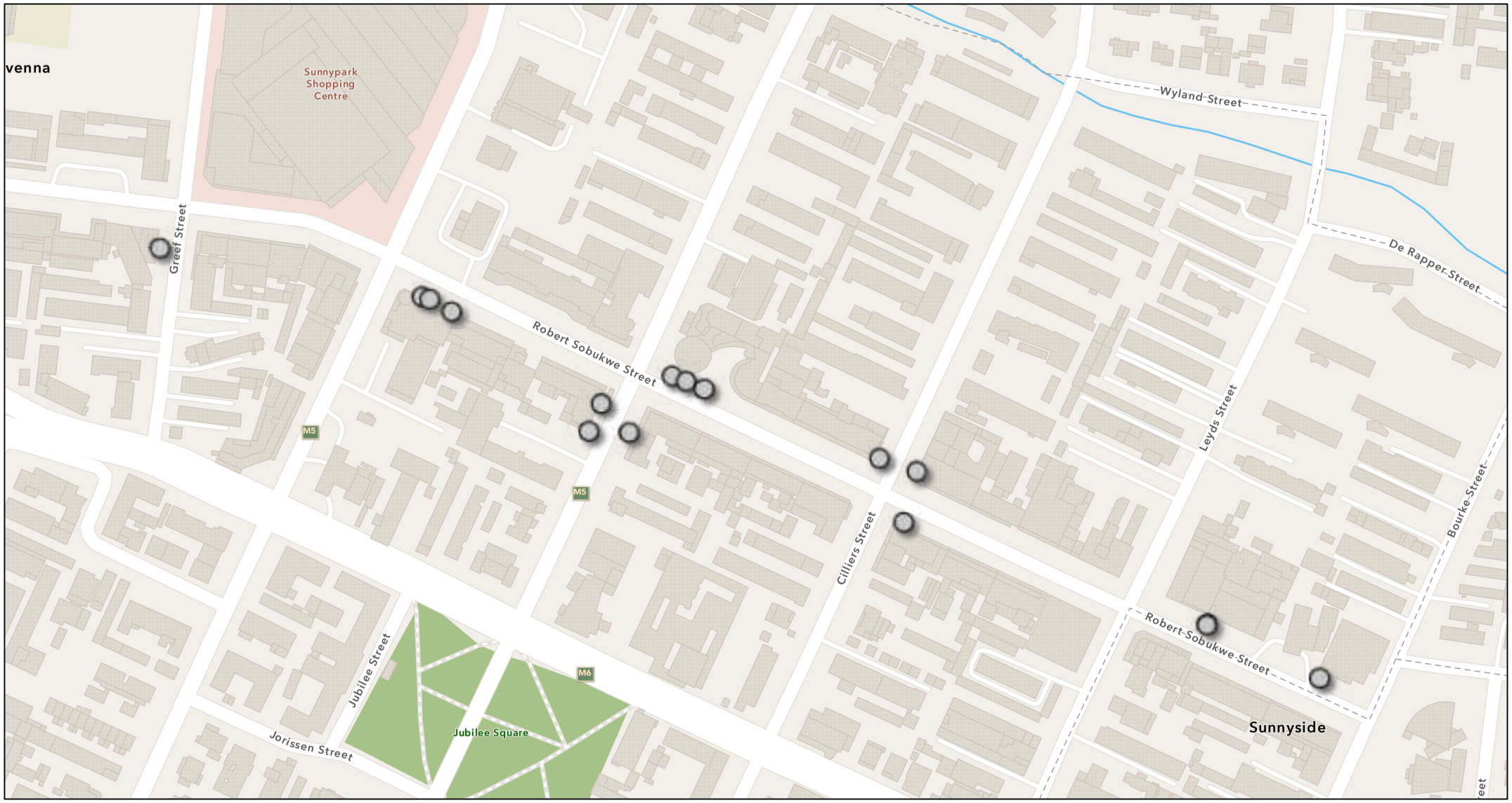
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

N1 UNADAPTABLE VENDOR STANDS



4/14/2024

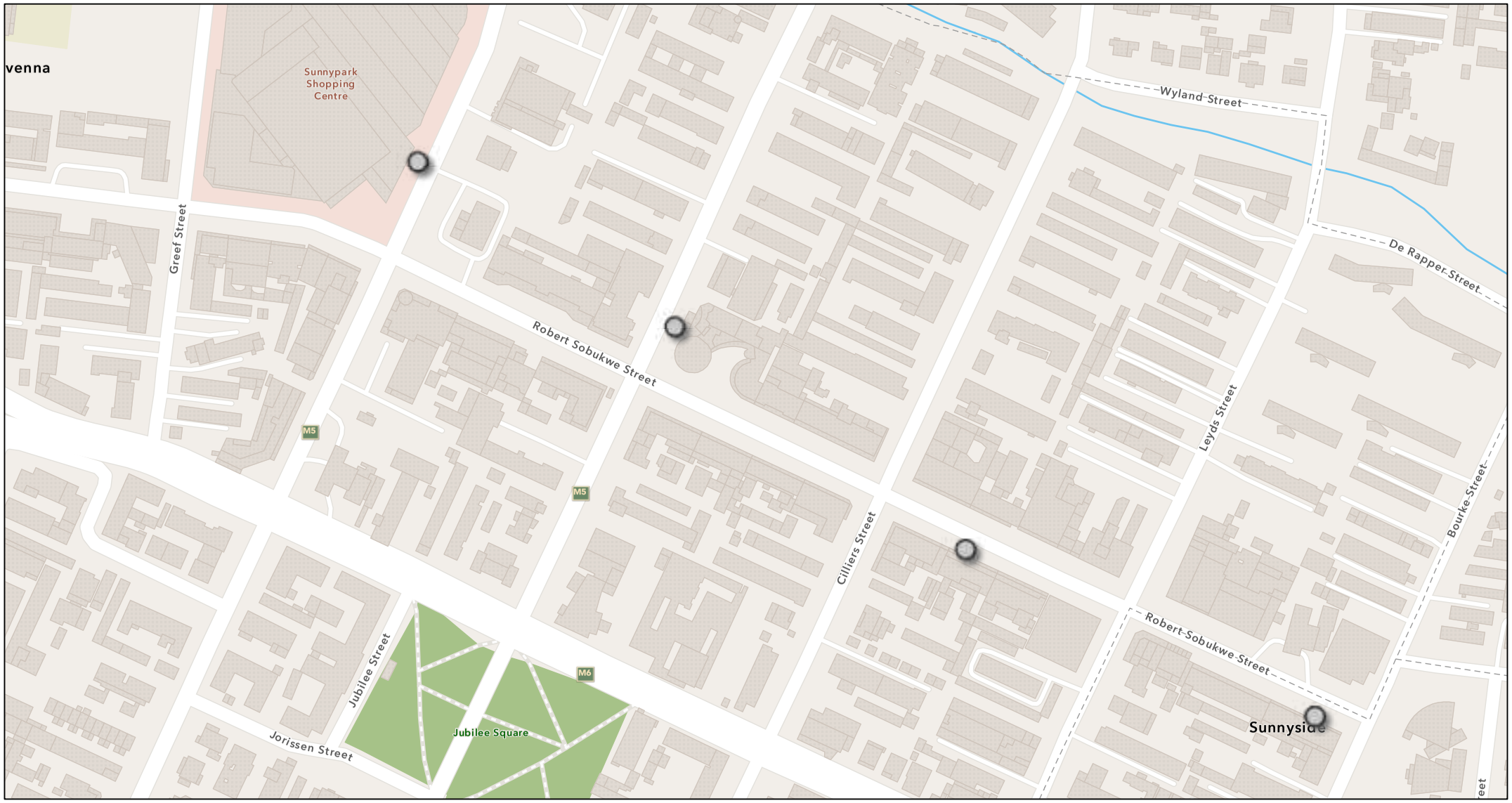
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

N3 LACK OF SHADE



4/14/2024

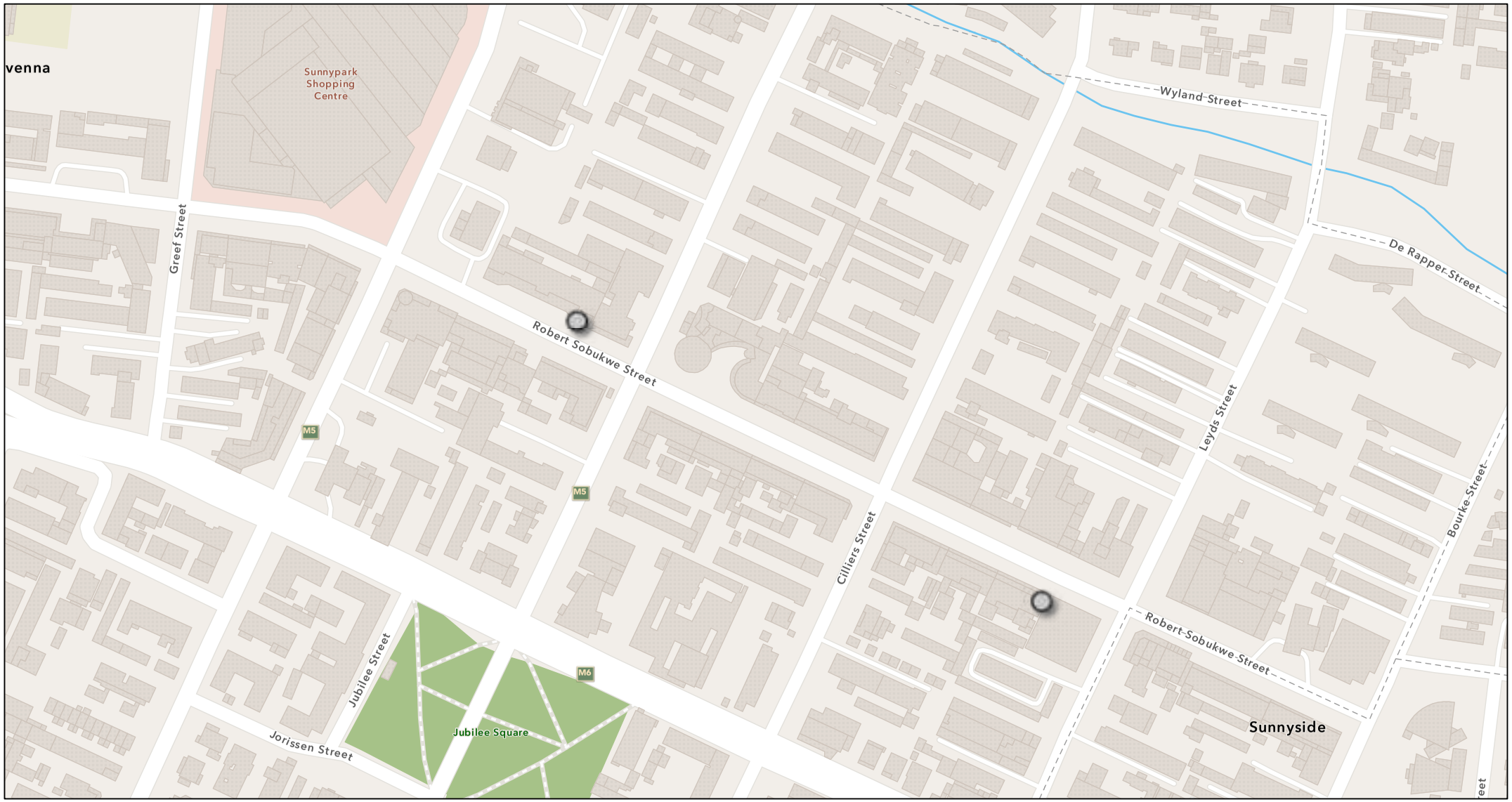
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

N4 DARK ALLEYS/ INDENTS



4/14/2024

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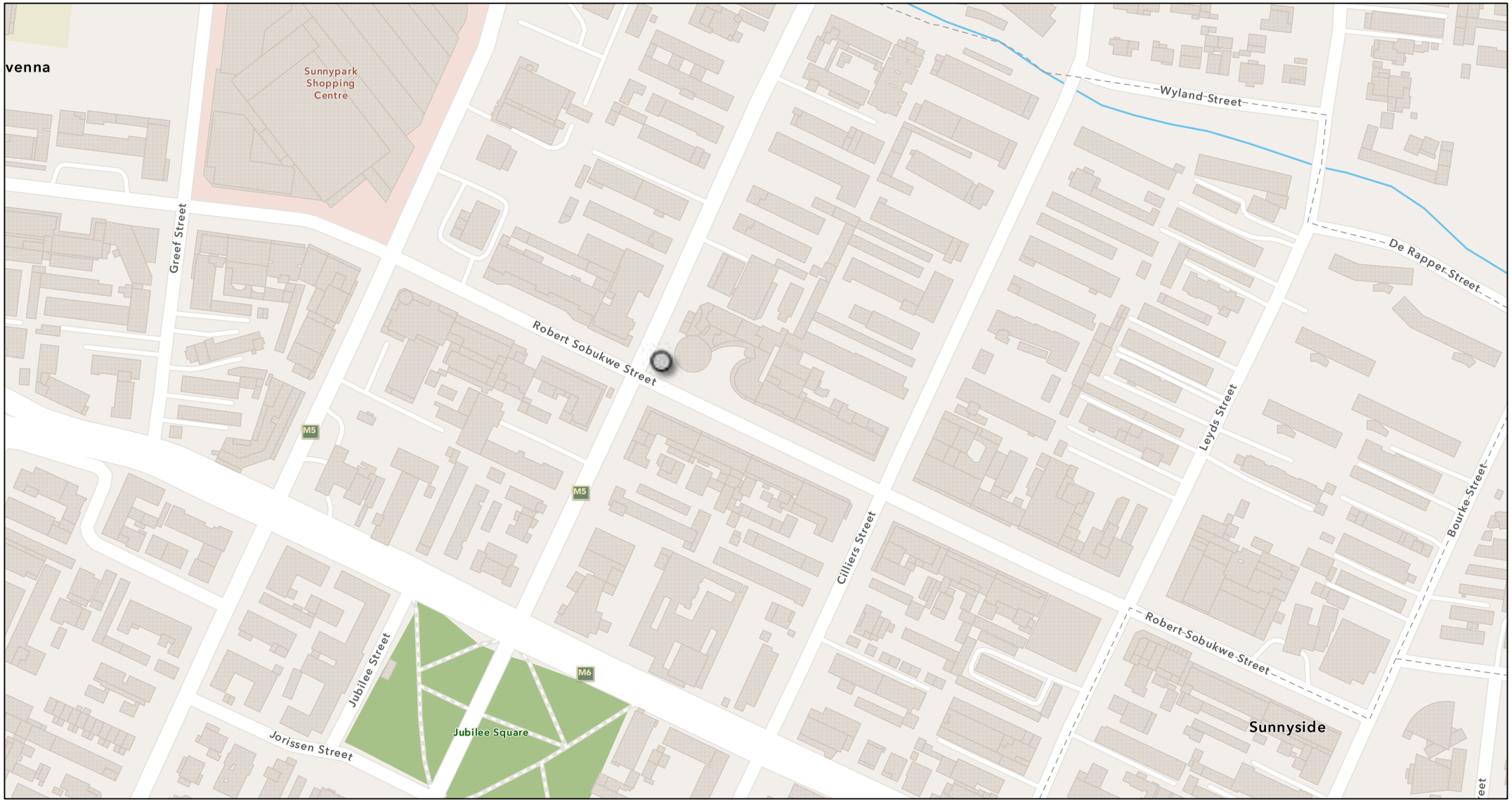
0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

N5 LOW OVERHEADS



4/14/2024

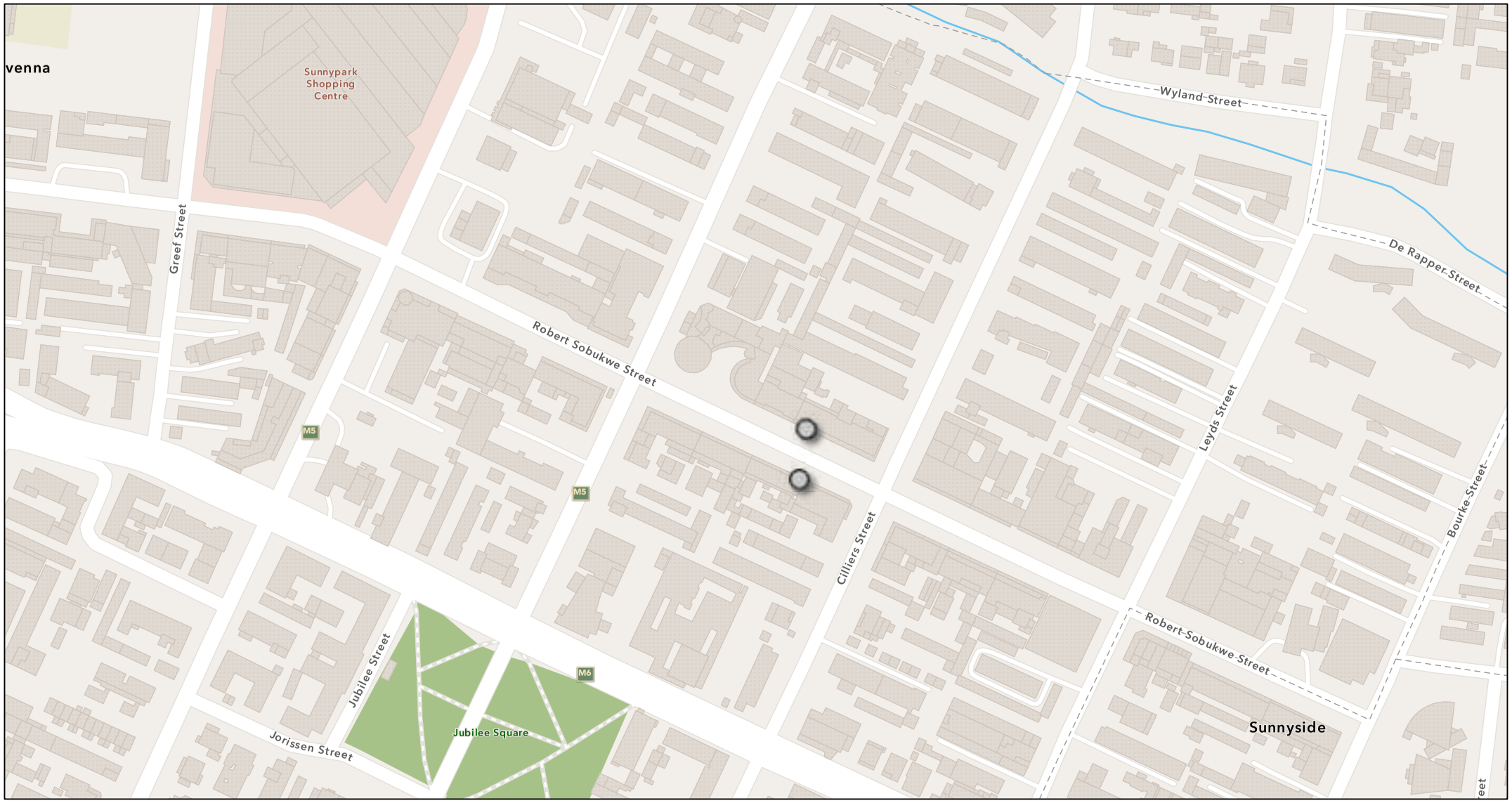
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

N6 LACK OF SEATING



4/14/2024

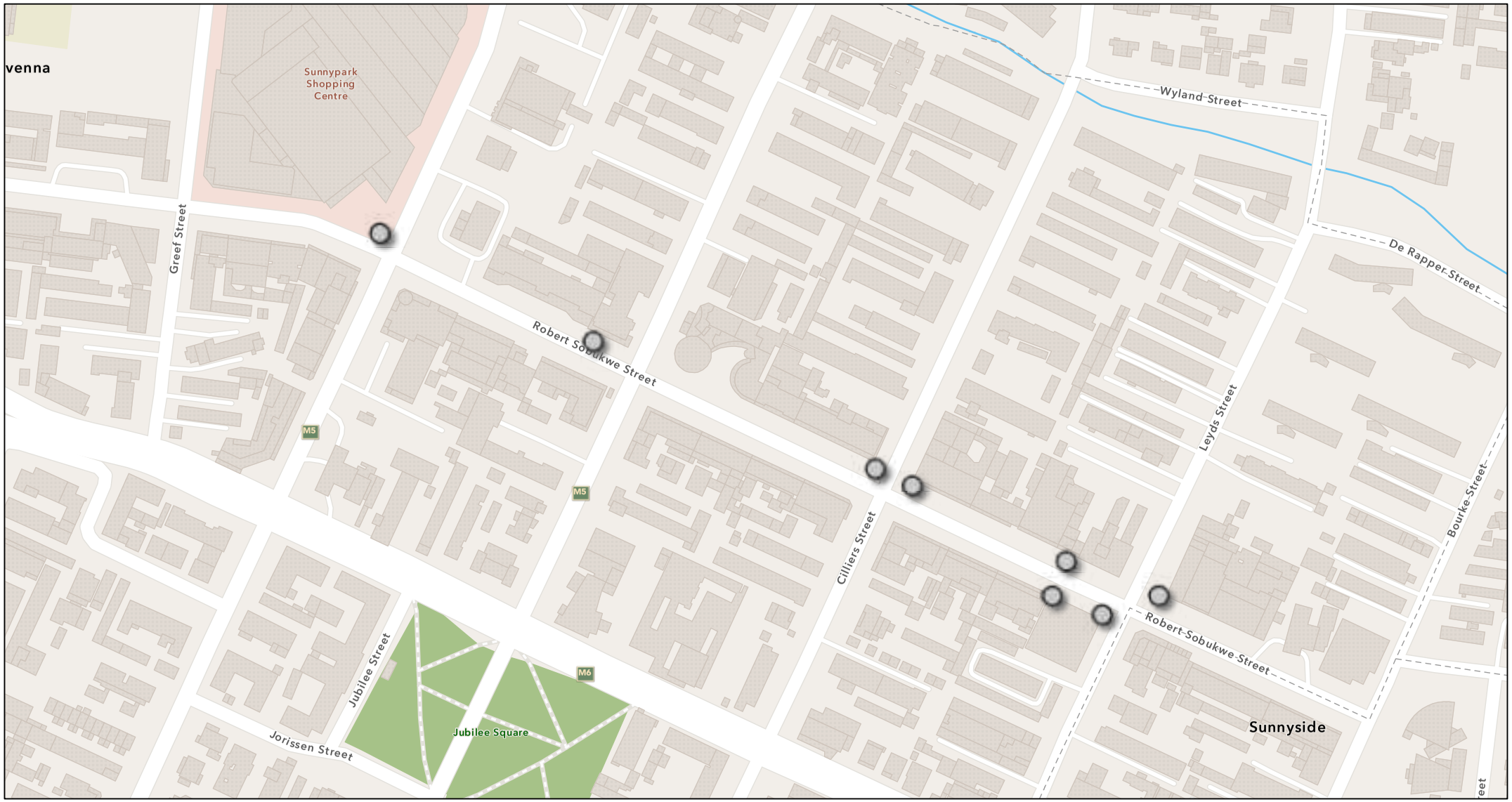
1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

NA1 BROKEN BINS



4/14/2024

1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

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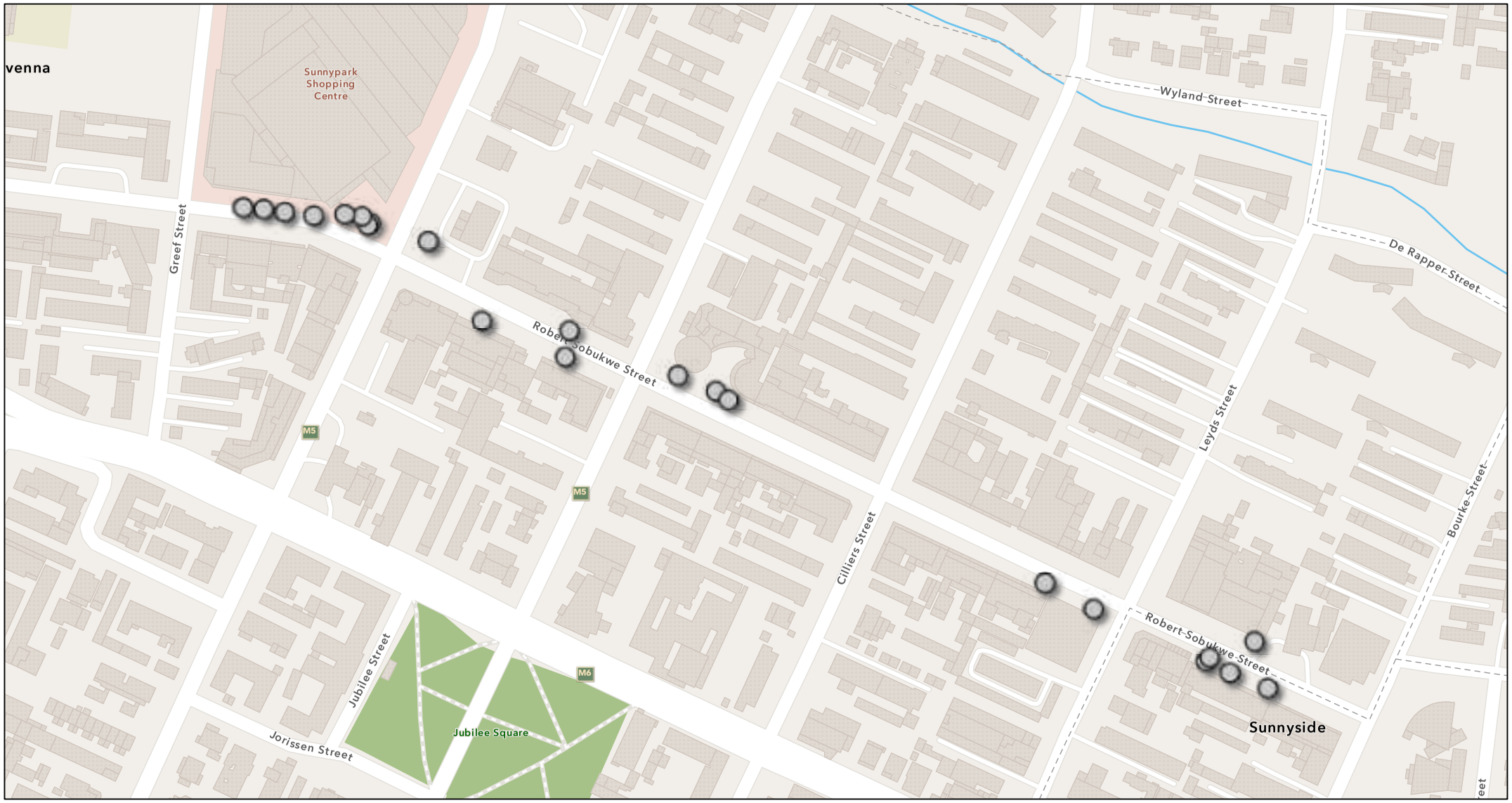
S1 HARD LANDSCAPES



4/14/2024

1:2,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

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